



# **Report of Structural Inspection and Condition Assessment of Trimming Room - Areas 2 & 3 and Press Room - Area 12\* at the Former Bossert Manufacturing Facility**

EPA Site

Utica, New York

*Prepared by:*

**EARTH TECH, INC.**

**Engineering and Construction Division**

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*\*Revised for Area 12, Phase II, March 10, 1998*

*Project No. 24708.01*

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## **I. INTRODUCTION**

Beginning on November 5, 1997, a structural inspection of three (3) rooms was conducted at the former Bossert Manufacturing site in Utica, New York. The inspection lasted 4 days with the intent of determining the structural integrity of the building area for use in clean-up operations as part of the EPA Superfund project at this site.\* A second (Phase II) inspection was performed on March 10<sup>th</sup> with the intent of providing a thorough inspection of Area 12 and to inspect the condition of exterior walls of Areas 10 and 11. The plant was used for the manufacture of aircraft parts and has been decommissioned and unoccupied since the early 1980's. Inspection areas have been numbered from 1 through 19.† This report addresses the inspection of **Areas 2, 3 10, 11 and 12**, since clean-up operations are presently in progress. Some of the buildings are scheduled for demolition after removal of hazardous material is complete.

## **II. PURPOSE**

The primary goal of the inspection is to determine if the designated rooms are safe for workmen to perform clean-up operations which involves remediation of all process equipment and piping and remnant "product" materials. Because the areas within the building need to be "clean" and safe prior to demolition, the purpose of this report is to provide a structural assessment and to recommend repairs.

Since this report covers only three (3) of the approximately sixteen (16) designated rooms of the facility, supplements to this report may be added after future inspections are complete. The intent of any recommended improvements is to allow workmen safety during clean-up operations and is not intended for occupancy and future building use.

## **III. INSPECTION AREA DESCRIPTION**

### **A. TRIMMING ROOM - AREA 2**

**Area 2** is constructed of 12" thick brick bearing walls supporting steel trusses spaced approximately 8'-0" on center. The floor plan is approximately 57'x160' and consists of a concrete slab on grade. No basement is present and the footing type and construction cannot be determined. The trusses span 57 feet clear (no columns) and support a wood

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\*Revised March 10, 1998

† Areas 5, 6, & 17 are undesignated. The "room area designations" were devised by Stetson-Harza, Inc., Utica, NY. See APPENDIX for site plans. Revised March 10, 1998.

plank roof. The trusses are irregular in shape and are best described in the detail for Area 2 shown in the APPENDIX. Note that a monitor (raised roof steel frame skylight) is present for the full length of the room. A masonry wall is present at the south end separating this room from Area 1.

**B. TRIMMING ROOM - AREA 3**

North of Area 2 is the Area 3 Trimming Room. There is no separation wall between these areas; however, construction types are quite different. Area 3 consists of 12" brick bearing walls and timber girders which support timber beams. The beams are spaced approximately 5'-4" on center and support plank roofing. The girders are continuous in the north-south direction and form three (3) 19' "aisles" of framing. The column grid spacing is 16'-0" NS x 19'-0" EW and supported by a slab on grade. The columns support the load of the timber girders. The floor plan shows the room as approximately 57'x300' and is found in the APPENDIX. Note that the "outer aisles" have timber beams which support the roof load and the "center aisle" supports only equipment load.

This center aisle also contains a monitor (raised roof skylight) constructed of timbers. An area of roof at the north end has collapsed. A common brick wall is present separating the above mentioned rooms with the Press Room - Area 12.

**C. GRINDING ROOM\* - AREA 10 AND AREA 11**

The grinding room is a two-story building of concrete roof and columns. Area 10 has a concrete second floor, whereas Area 11 has a wooden floor. The exterior walls along Noyes and Lenox Streets are constructed of brick and glass windows. Note that these windows have square foot areas much greater than that of the brick indicating a "low" load carrying capacity of the wall.

**D. PRESS ROOM - AREA 12**

The Press Room is a very large area covering approximately 165'x300'. Multiple roofs, skylights and a courtyard to the east make this room irregular in shape where shown in the plan - APPENDIX. Two (2) roof areas have collapsed where shown on the plan.

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\*Revised March 10, 1998



Large presses are present in **Area 12** which appear to have been placed prior to erection of the structural roof framing. As a result, special roof framing (by design) is present where the upper part of the presses meet the roof steel or timber framing. The special framing around these presses is questionable and must be addressed in future inspections and reports. Repairs may be needed in specified areas.

#### **IV. OBSERVATIONS**

Member sizes and spacings were determined from field measurements. Structural steel or timber members were visually inspected for overall condition and estimated degree of deterioration. Connections were checked for missing rivets or bolts for evidence of overloading or excessive deflection. Roof failures which have occurred were studied in order to assess potential failures in the remaining structures.

In general, it is Earth Tech's opinion that the building structure encompassing **Areas 2, 3, and 12** is not safe. The specified minimum requirements to reinforce missing, damaged or otherwise failed members must be made in order to make the building safe prior to continuing clean-up operations. Also, it should be mentioned that a variety of materials were used in the construction of the building(s). Due to the damp environment which the steel and timber has been subjected to, advanced deterioration has occurred primarily in locations of leaky walls and roofing.

##### **A. AREA 2 - TRIMMING ROOM ROOF PLAN**

The 12" brick bearing walls are in generally good condition and support the ends of the steel trusses. The ends of the trusses are fully embedded in the brick masonry with no evidence of loose brick surrounding the truss ends. The overall appearance of the trusses show that they are well constructed and have less than 10% material loss at any cross-section. There are exceptions. Two (2) trusses exist with a missing lower chord member, obviously due to intentional cutting and removal likely at a time when the plant was operational. Specifically, the lower chord double angle  $2L2\frac{1}{2} \times 2\frac{1}{4}$  was removed and a gusset was severely damaged as shown on sketch Detail 1 of the APPENDIX.

An analysis of the truss indicates that the missing member is needed to transfer the "tension force" to the remaining members between lower chord panel points. A calculated tension load of 36 kips in this member is due to combined dead and snow load. A replacement member is required to be field welded at the two (2) affected trusses.

Another concern is that the trusses near the south end of Area 2 support excessive loads of hanging equipment. In some cases, this equipment is suspended by rods which are located too far (more than the recommended maximum of 6") from the truss panel points. Since deflection of these trusses is noticeable, all equipment should be removed from the truss. Note, however, that the structural steel attachments, piping or HVAC ducts may remain.

It is important that all of the above repairs and equipment removal be made prior to the first major snowfall.

**B. AREA 3 - TRIMMING ROOM ROOF PLAN**

The 12" brick bearing walls are in relatively poor condition especially where excessive moisture is evident. This is due to continued "wash-out" of the cement mortar between the brick. In some instances this has caused bricks to displace inward. At least one (1) timber beam no longer has adequate bearing on the supporting brick. Grout is required to fill the void around the timber beam(s) - See the detail for Area 3 - APPENDIX.

It is Earth Tech's opinion that the cause of roof collapse at the northwest corner is due to failure in a connection of the prefabricated timber beam. A "hinge" developed in at least one timber beam at the "ship-lap" connection located approximately three (3) feet from the west end. The hinge is presumably caused by fatigue and resultant joint separation and failure at this ship-lap connection. Evidence of additional timber beams with the same connection problem has been found. A single bolt vertically placed in the joint further identifies this connection. These beams should be shored near the ship-lap joint as shown in the detail for Area 3 - APPENDIX.

Another problem has been identified as a result of the roof collapse. The wood frame skylight, by design, was supported by the timber beams. Since the beams at the northwest end have collapsed, adequate support for the skylight walls is no longer present. The base of the skylight wall is badly twisted from its original position. As a result, it is mis-aligned when viewed from the supporting timber girder. To remedy this, braces and shims must be added as shown in the details for Area 3 - APPENDIX.

**C. GRINDING ROOM - AREA 10 AND AREA 11\***

The brick parapet walls are loose and pulling outward as observed at the roof line of Building 10. Also much of the brick is loose, specifically above the windows and mortar joints are deteriorated. Some lengths of reinforced concrete window sills are broken and have fallen to the ground below. Note that only Area 10 has structural problems with the exterior walls.

As mentioned, previously Area 10 has a concrete second floor and roof. The floor was field measured as at least 8" thick at all areas. Both roof and floor were found to be in satisfactory condition.\*

These observations indicate concern for traffic and pedestrians of Noyes and Lenox Streets. The roof parapet walls are high above the street level and pose the greatest danger of falling debris.\* Refer to Figure 4 of APPENDIX for location.

**D. AREA 12 - PRESS ROOM ROOF PLAN**

The 12" brick bearing walls of the east wall are badly deteriorated. Inspection of this wall revealed loose brick and an exposed continuous steel bearing plate that is attached to the underside of the roof "I" beam framing. This condition is best described in the photographs found at the end of the report. It is important to note that the steel "I" beams are closely spaced and welded to the continuous bearing plate. In general, even with substantial loss of brick, no single "I" beam is likely to slip off the wall because they are welded collectively to the embedded plate. Local grouting is required per Detail 5 - APPENDIX to maintain adequate embedment. Continued loss of brick bearing under the plate must be monitored.

\*An inspection performed during the week of March 2 revealed increased deterioration of the brick wall. As a result the beam bearing ends have little or no brick remaining to support them. Deterioration of the brick wall is continuing rapidly.

Some additional serious problems exist in Area 12. As a result of the roof collapse at the northeast corner, a steel pipe column has evidence of buckling but continues to support roof load. \*Repairs should be made per Detail 16- APPENDIX. An area

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\*Revised March 10, 1998

adjacent to the roof collapse should be roped off to protect workers near the unstable roof. Also, wood beams and brickwalls are unstable at locations shown in Detail 12.

A second condition is present at the framing around two (2) presses near the south end. Timber beams which have been cut (likely the result of setting the press in place) are now long cantilevers extending beyond the supporting girder. This condition is shown in Detail 7-APPENDIX. It appears that various load duration (e.g. rain or snow on and off the roof) over the lifetime of these members has weakened them. The excessive load and long cantilevered length (exceeding 10') is also a concern. Because the visual appearance is good, and a second inspection indicates no deterioration, no reinforcement is needed. \*

## **V. CONCLUSIONS & RECOMMENDATIONS**

### **A. OVERALL CONDITION ASSESSMENT**

1. Conditions of the buildings are poor and based on field observation, some members may be "underdesigned" to accept the local code snow load.
2. Modifications shown in the details - APPENDIX are considered a minimum so that workmen will be safe in the continuing clean-up operations.
3. It is important that shearing operations during demolition work will not impose a lateral force to the weak brick walls.
4. Because the roofing of Area 12 is moisture saturated, the timber members (which support the roof) are continuing to deteriorate. Some members are broken or missing. The steel beams and columns are however performing very well and the connections of steel framing members show no evidence of overstress. \*

### **B. RECOMMENDATIONS - AREAS 2 & 3**

1. Reinforcements to steel trusses, shoring of timber members and grouting of brick walls is needed at Areas 2 & 3. Removal of unnecessary equipment below

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\*Revised March 10, 1998

the trusses and timber beams is advised. With these corrections, the steel trusses and timber members will have the capacity to support the code snow load.

2. Extreme caution is advised to keep heavy equipment from impact on any building column. The W6X15 column at the double-door entry to **Areas 2 & 3** is especially vulnerable. Caution or reinforcement is advised.
3. Future inspections are recommended for the remaining areas of the building(s).
4. Reinforcements should be installed prior to the first "major" snowfall.
5. Place 5/8" x 4' x 8' plywood sheets at locations shown in this report. Sheets to be located under rotted roof plank to protect workers. ALT: 9/16" OSB
6. Rope off or barricade areas of roof collapse to protect workers from falling debris or continued collapses.

**C. RECOMMENDATIONS - AREA 10 AND AREA 11\***

1. Partial demolition of the roof and exterior brick walls of Area 10 is recommended. The reason for this is to protect pedestrians and traffic at the street from falling debris. Demolition of the roof and walls will accomplish this. The second floor concrete is thick enough and has the required strength to resist impact from falling roof and wall debris (of demolition work).
2. The exterior brick walls of Area 11 are adequate and need not be demolished until a later time.

**D. RECOMMENDATIONS - AREA 12\***

1. Removal of unnecessary equipment below the timber beams is advised. Specific areas are itemized on the Floor Plan and TABLE I - APPENDIX.
2. Add jack posts and wood beams to support the "I" beams near the deteriorated brick wall per Detail 18. Since the brick wall separates Areas 2 & 3 with Area 12, (and work is completed in Area 2 & 3), the supports are to be placed on the Area 12 side.

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\*Revised March 10, 1998

3. Wood beams which have been damaged should be reinforced where shown in the details of the APPENDIX.
4. Some wood braces or beams are missing as a result of partial roof collapse. These items are specially listed in the APPENDIX. Replacement members should be added as noted in Detail 15.
5. Steel frames are unstable as a result of the partial roof collapse described above. Frames should be braced to ensure stability. Repairs are shown in Detail 16.
6. Extreme caution is advised to keep heavy equipment from impact on any building column.
7. Remove loose roofing plank or deck that may cause hazard to workmen below.
8. Rope off or barricade the area of roof collapse where shown on the Floor Plan - APPENDIX.
9. Wood beams and brick walls are unstable at locations shown in Detail 12. Repair as shown. (See also sections 1 and 2.)

## ***APPENDICES***

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**TABLE I - BUILDING 12 - PRESS ROOM**  
**DESCRIPTION OF STRUCTURAL MODIFICATIONS**

ITEM NO.	PROBLEM	RECOMMENDED REPAIR
1	Excessive load on timber beams	Remove fan and support brackets See Plan Item <u>1</u> .
2	Damaged timber beam	Repair per Detail <u>2</u> .
3	Damaged timber beam	Repair per Detail <u>3</u> .
4	Excessive load on timber beams	Remove (2) Tanks. See Plan Item <u>4</u> .
5	Excessive load on timber beams	Remove tank. See Plan Item <u>5</u> .
6	Damaged timber <u>beam</u>	Add a 2x8, strap between timber beam and rafter. Add 2x8 reinforcer to beam. See Detail <u>6</u> .
7	Broken timber joist	Repair per Detail <u>7</u> .
8	Column is out of plumb and loose at base.	Straighten column and grout under base plate. See Plan - Item <u>8</u> .
9	Missing beam connection. Beam end is loose.	Weld the existing clip angle to the beam. See Plan - Item <u>9</u> .
10	Short timber beam is not straight	Re-align beam and toe nail to supporting beam. See Plan - Item <u>10</u> .
11	Missing 2x6 kicker	Add 2x8 kicker at (2) locations. See Detail <u>11</u> .
12	a. Missing kicker and missing 4x4 post b. Loose and missing brick c. Broken joist bearing plate d. Rotted timber beam	Add posts and kickers per Detail <u>12</u> . Remove brick where shown on Detail <u>12</u> . Place wood beam to support existing wood joists per Detail <u>12</u> . Add 2x8 reinforcer on each side per Detail <u>12</u> .
13	(5) wood joists are broken	Nail 2x8 reinforcers on one side of each joist. See Detail <u>13</u> .

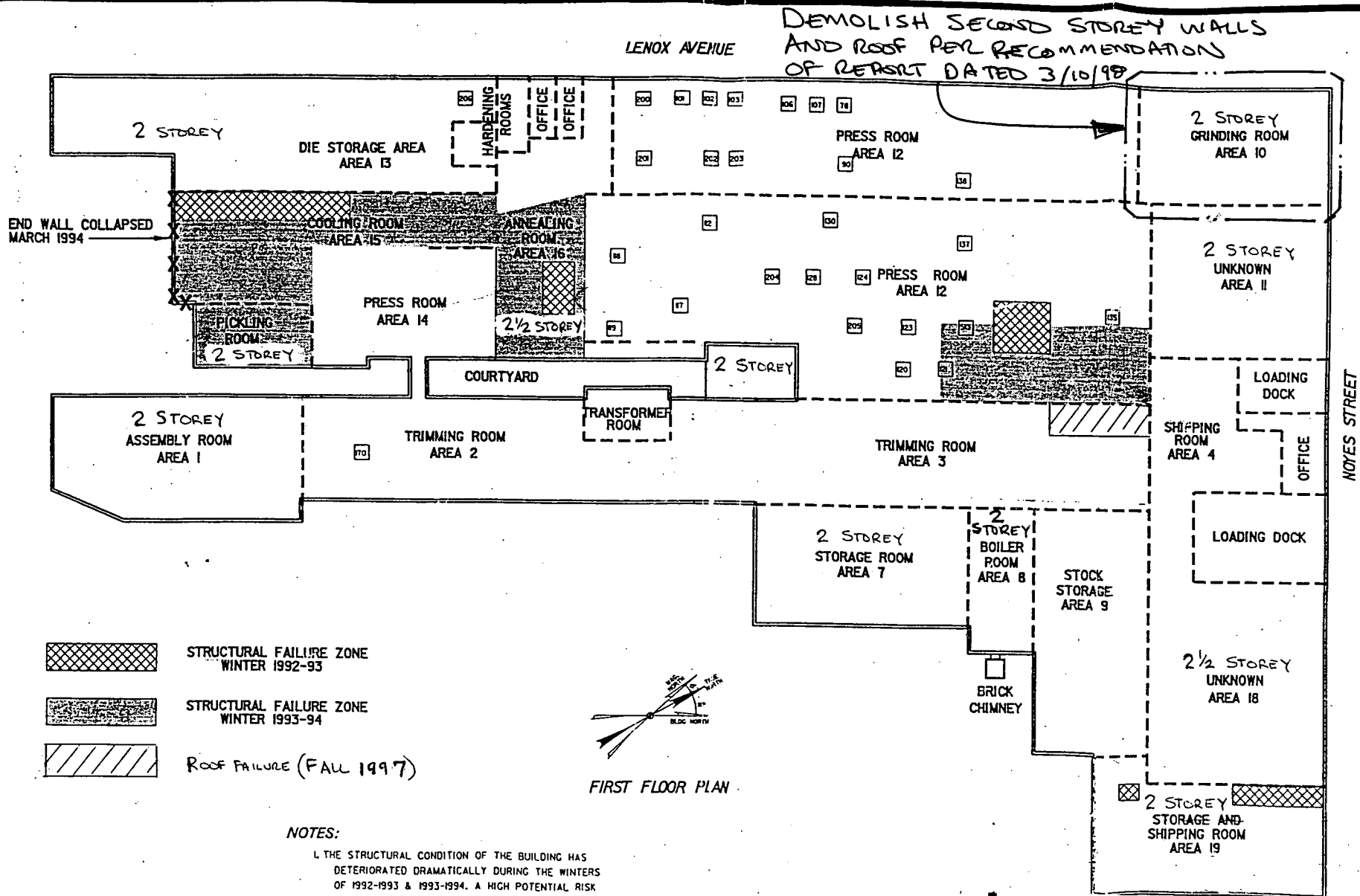


**ITEM  
NO.**

**PROBLEM**

**RECOMMENDED REPAIR**

- | ITEM NO. | PROBLEM  | RECOMMENDED REPAIR   |
|----------|--|--|
| 14       | Timber beam broken off at wall support.  | Add jack post to underside of beam 2'-0" from end. See Plan Item <u>14</u> .   |
| 15       | Cribwall is badly damaged. Vertical 4x4 posts and kickers are loose or missing. Joist bearing plate is damaged.    | Remove all overhanging roof materials and straighten crib wall. Reattach timbers that are loose. Add support for upper joist bearing plate. See Detail <u>15</u> .                         |
| 16       | a. Steel pipe column is not plumb.<br>b. Upper W12 Steel beams are not connected together.<br>c. Loose W12 column. | Straighten and weld structural angle as shown in Detail <u>16</u> .<br>Weld top and bottom plates to beam.<br>Weld top plate to top of beam. Add structural angle, then remove W12 column. |
| 17       | Roof timber has slipped off its bearing end.   | Add 4x4 post - Secure to steel beam below. See Detail <u>17</u> .  |
| 17a      | Roof timber beam is broken.  | Add 2x8 reinforcer to each side of "ship-lap" connection. See Detail <u>17a</u> .  |
| 18       | Beams are not adequately supported because brick wall is severely damaged.   | Add jack posts and timbers to support underside of steel beams. See Detail <u>18</u> .   |
| 19       | Timber frame not adequately braced.  | Add brace per Detail <u>19</u> .   |



FORMER BOSSERT MFG. CO.  
UTICA, NY  
STRUCTURAL CONDITION  
ASSESSMENT SHEET 2 OF 7  
EARTH TECH, INC. 11/5/97

FIG. 4

BOSSERT MANUFACTURING PLANT SITE REMEDIATION  
STRUCTURAL FAILURE ZONES

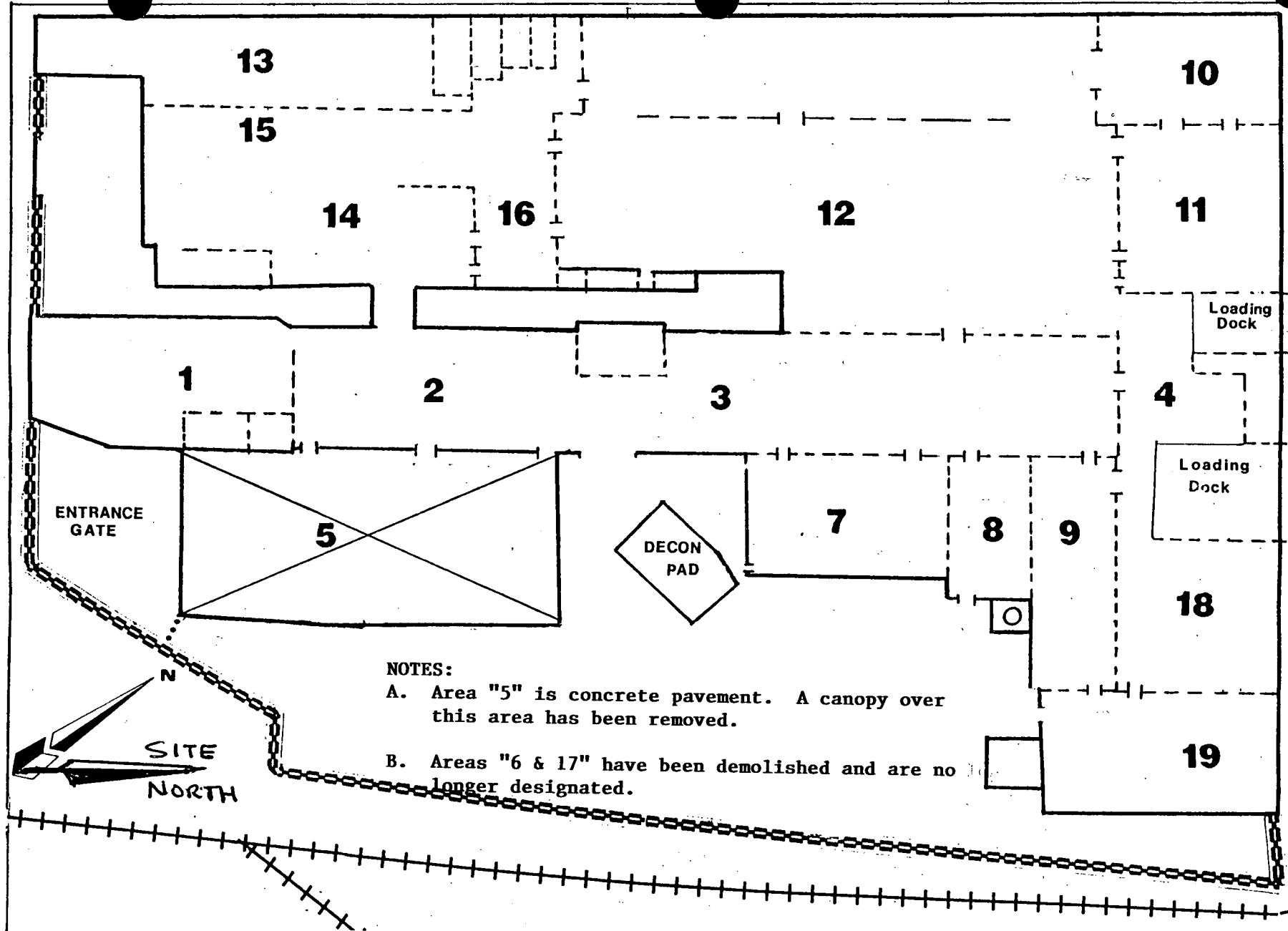
DATE 6/22/94  
DRAWN BPH  
NO. 6648

**Stetson-Harza**  
A HARZA COMPANY

Genesee, Syracuse, Utica, Albany, New York  
250 Jordan Rd., Littleton, CO 80120  
Recessed Technology Park  
1280/108283-8080

Oswego Street

Noyes Street



**NOTES:**

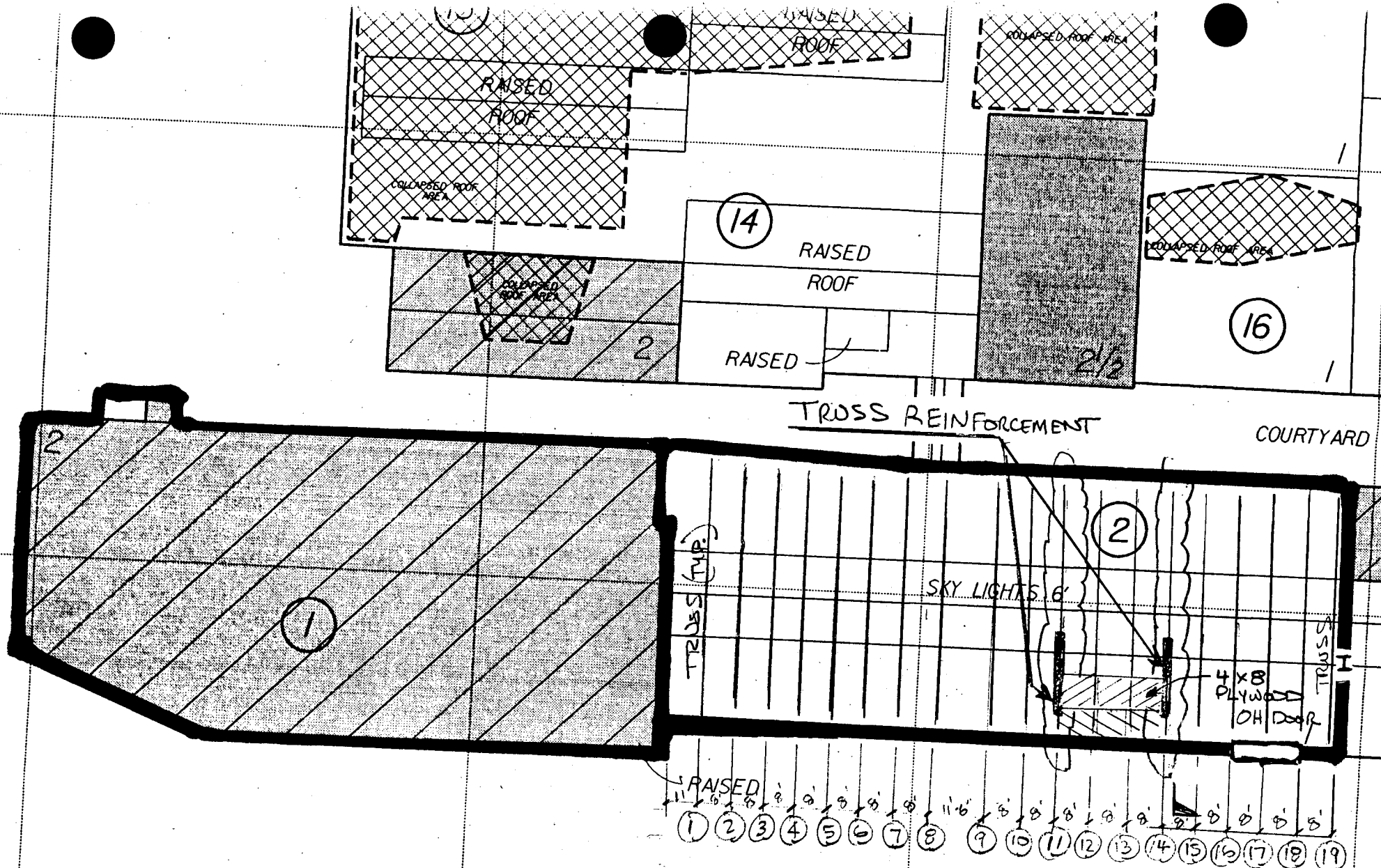
A. Area "5" is concrete pavement. A canopy over this area has been removed.

B. Areas "6 & 17" have been demolished and are no longer designated.

**SITE KEY PLAN**  
Not to Scale

Arterial Highway ( State Highways 5, 8, 12 )

FORMER BOSSERT MFG. CO  
UTICA, NY  
STRUCTURAL CONDITION  
ASSESSMENT SHEET 1 OF 7  
EARTH TECH, INC. 11/5/97



SITE

NORTH

ROOF PLAN

AREAS 1 & 2

SCALE: 1" = 30'-0"

FORMER BOSSERT MFG. CO.

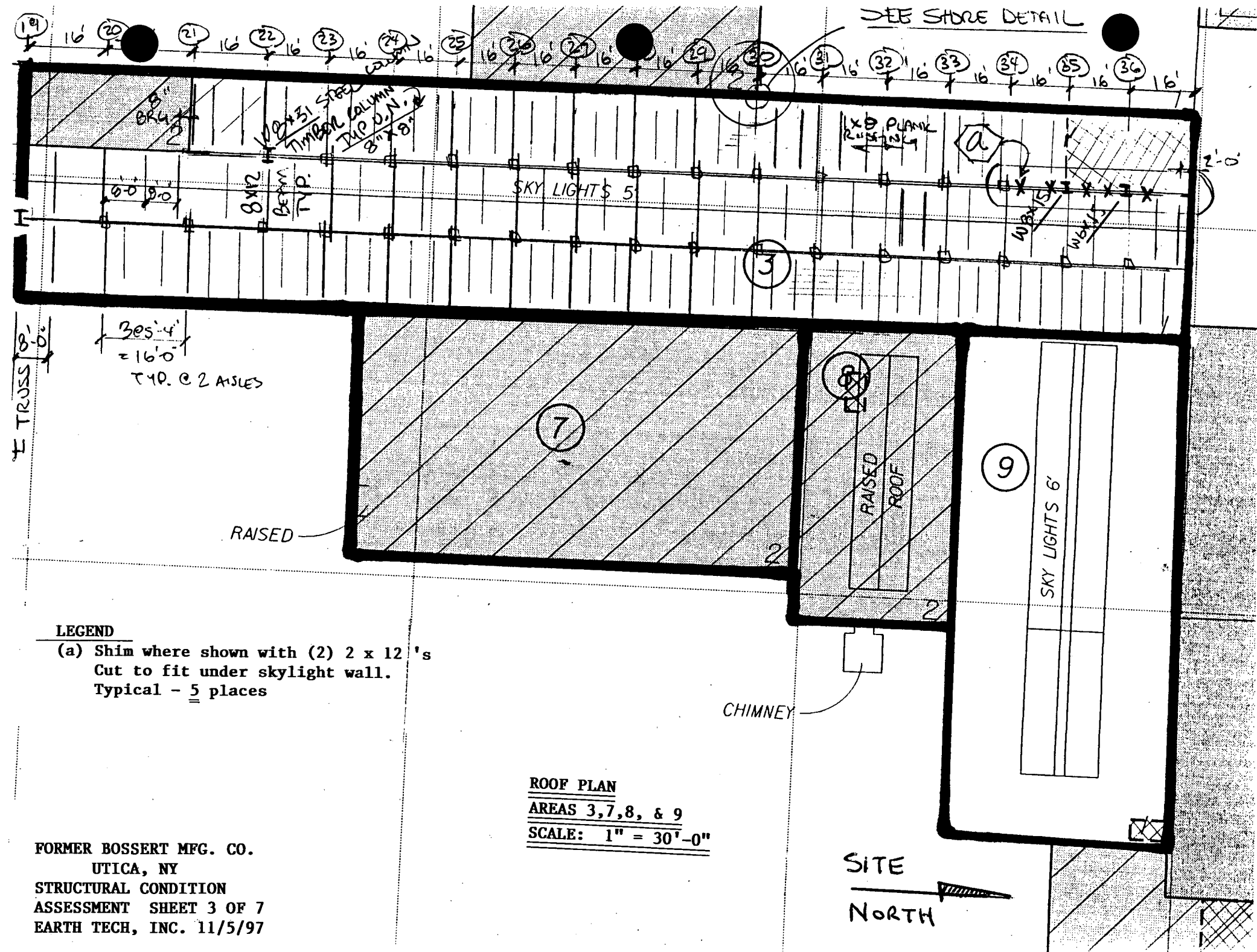
UTICA, NY

STRUCTURAL CONDITION

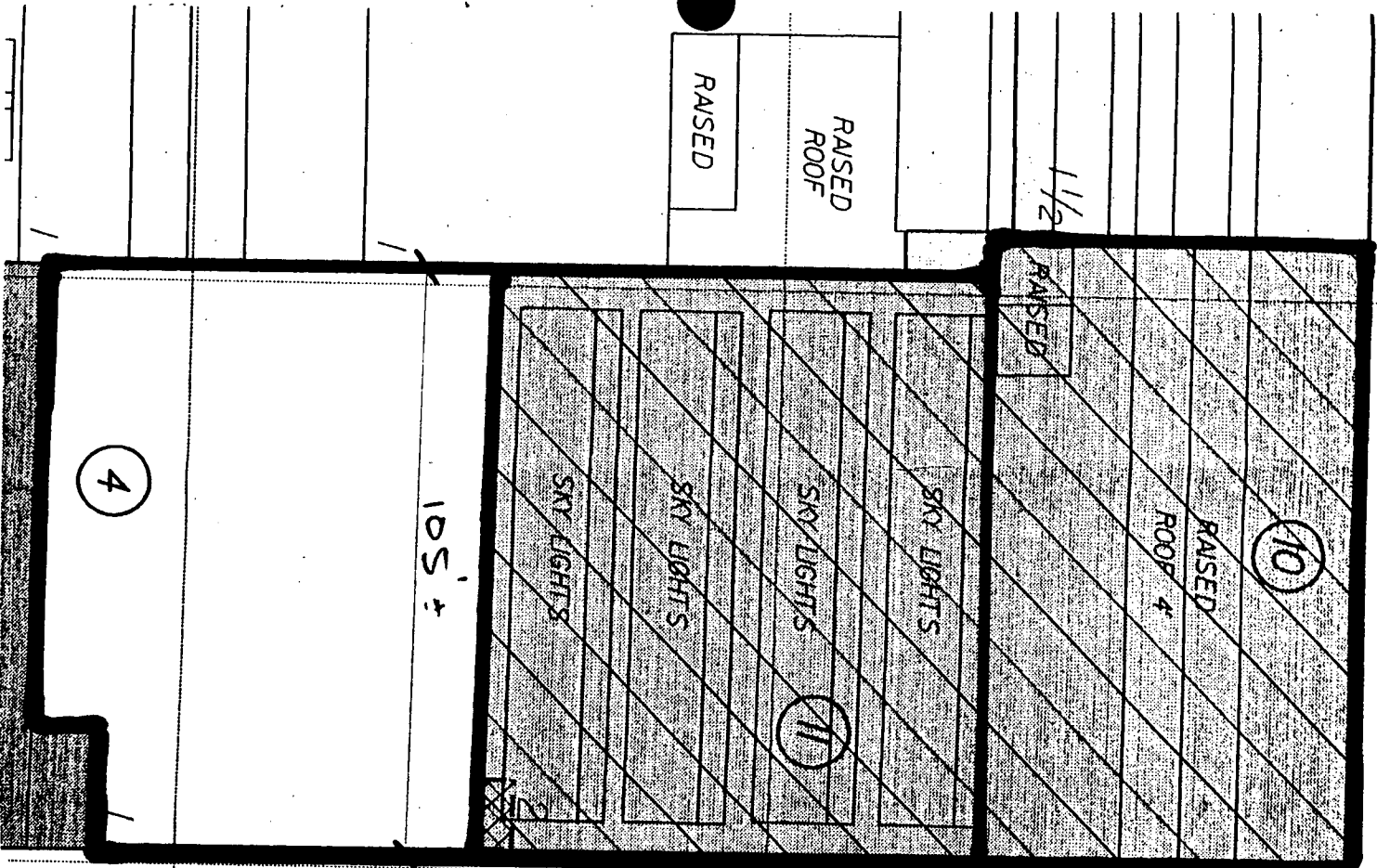
ASSESSMENT SHEET 2 OF 7

EARTH TECH, INC. 11/5/97

DEE STORE DETAIL



TE  
North

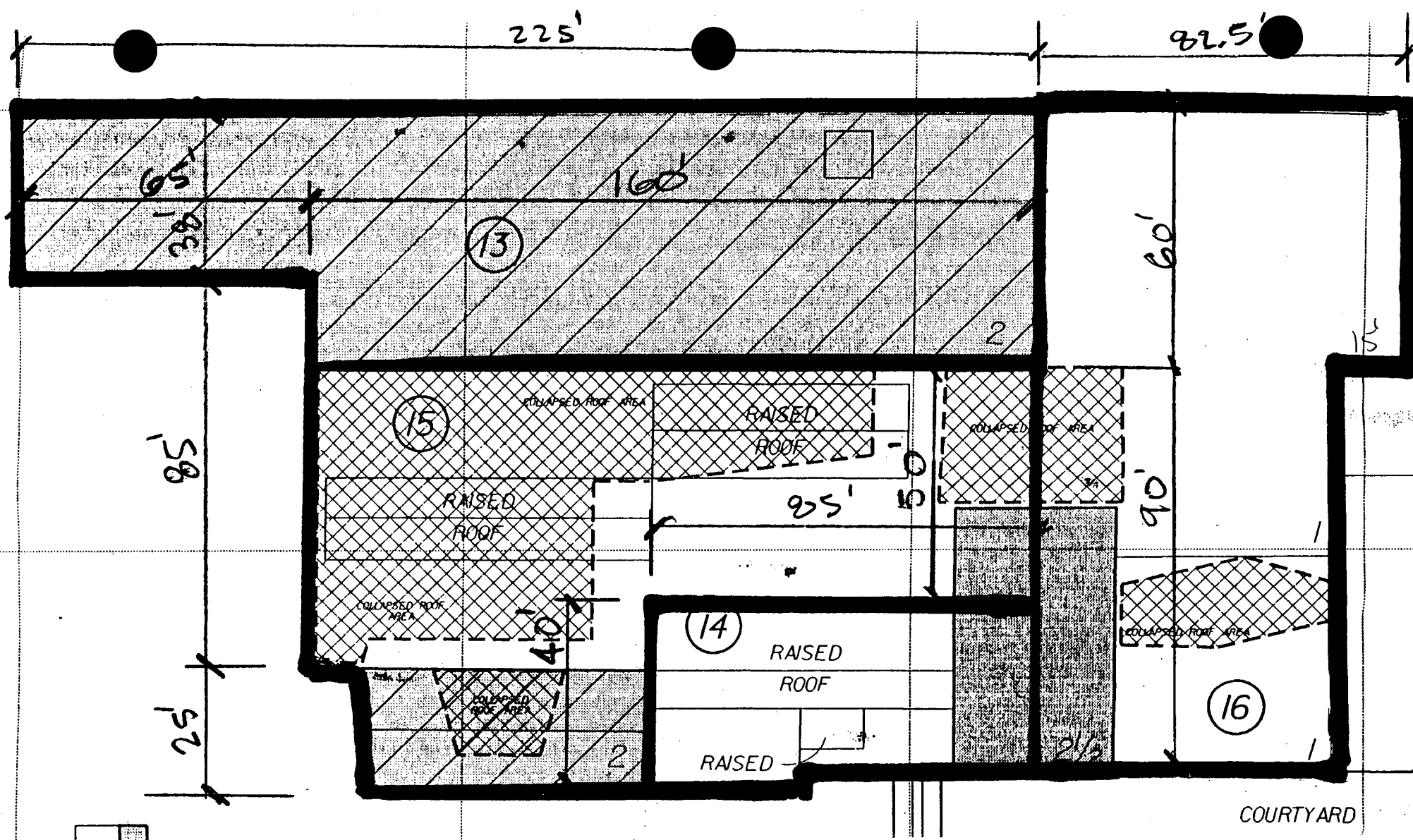


ROOF PLAN

AREAS 4, 10 & 11  
SCALE: 1" = 30'-0"

75' ±      85'      60'

FORMER BOSSERT MFG. CO.  
UTICA, NY  
STRUCTURAL CONDITION  
ASSESSMENT SHEET 4 OF 7  
EARTH TECH, INC. 11/5/97



SITE

NORTH

ROOF PLAN

AREAS 13, 14, 15 & 16

SCALE: 1" = 30'-0"

FORMER BOSSERT MFG. CO.

UTICA, NY

STRUCTURAL CONDITION

ASSESSMENT SHEET 6 OF 7

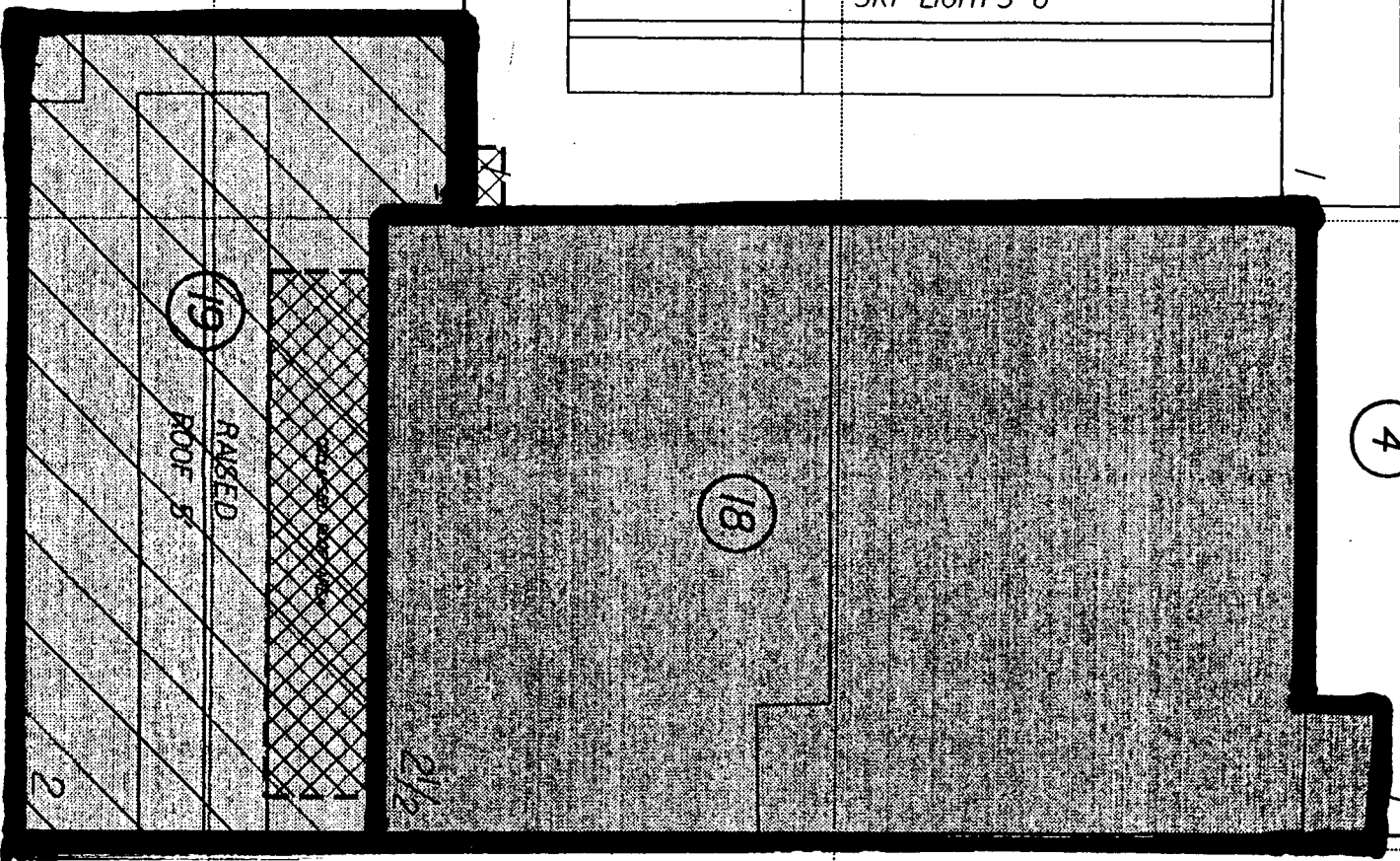
EARTH TECH, INC. 11/5/97

SITE  
~~PLAN~~  
NORTH

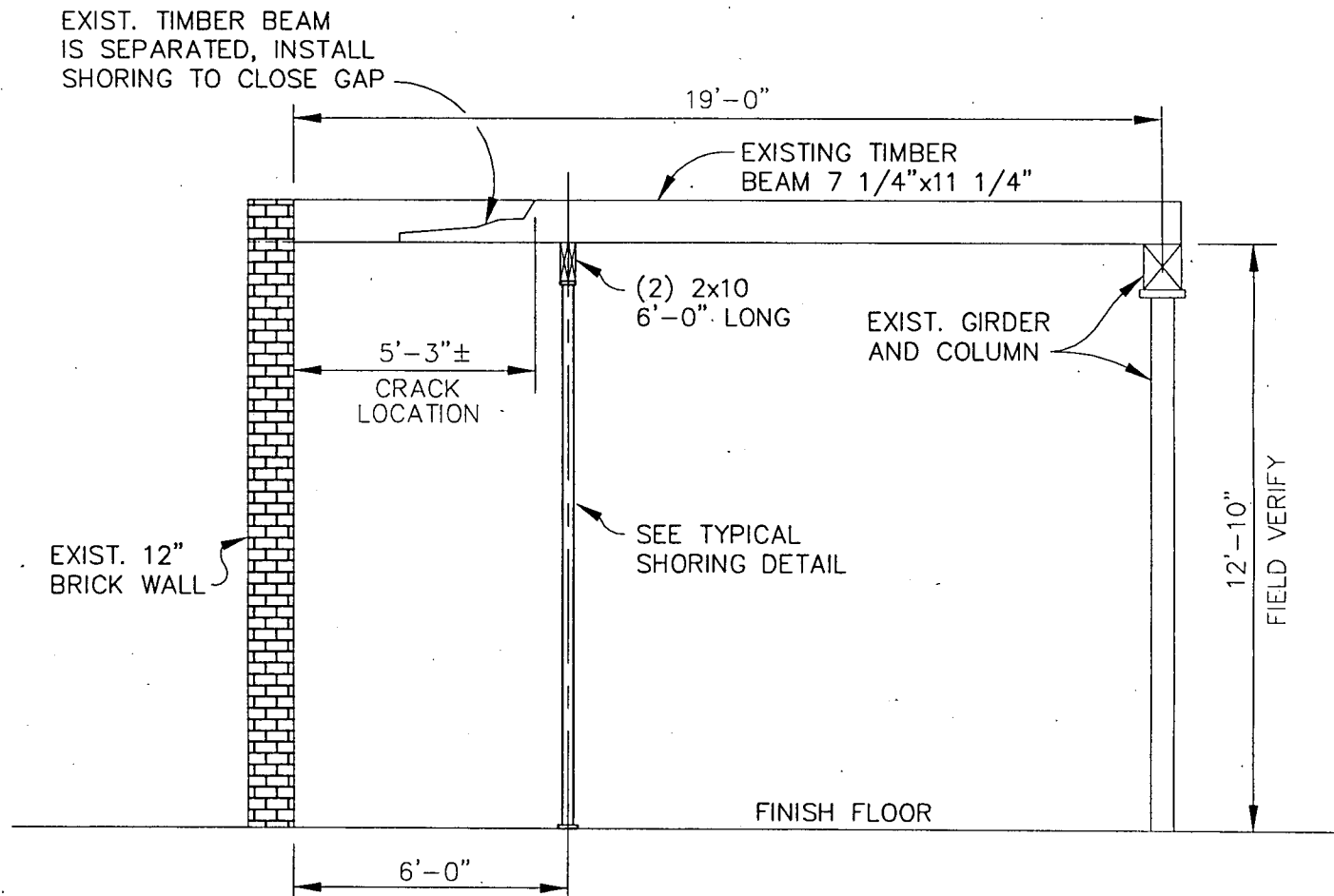
ROOF PLAN  
AREAS 18 & 19  
SCALE: 1" = 30'-0"

FORMER BOSSERT MFG. CO.  
UTICA, NY  
STRUCTURAL CONDITION  
ASSESSMENT SHEET 7 OF 7  
EARTH TECH, INC. 11/5/97

RAISED







NOTE:  
SHORING MUST BE INSTALLED  
ON EAST SIDE OF VERTICAL  
CRACK

## AREA 3-BUILDING ELEVATION LOOKING NORTH

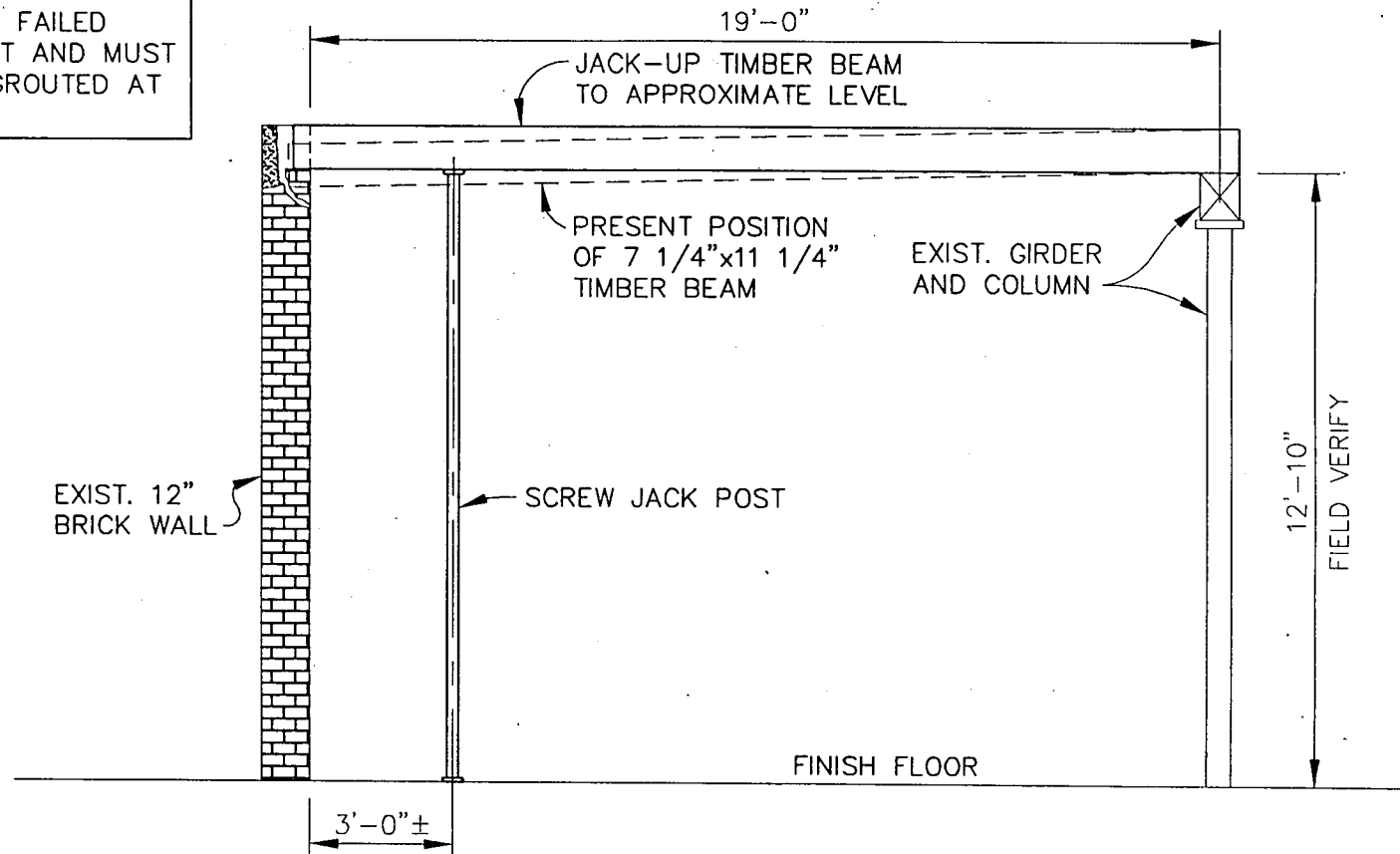
SCALE: 1/4" = 1'-0"

(FRAME LINE 34)

EARTH  TECH

**NOTE:**

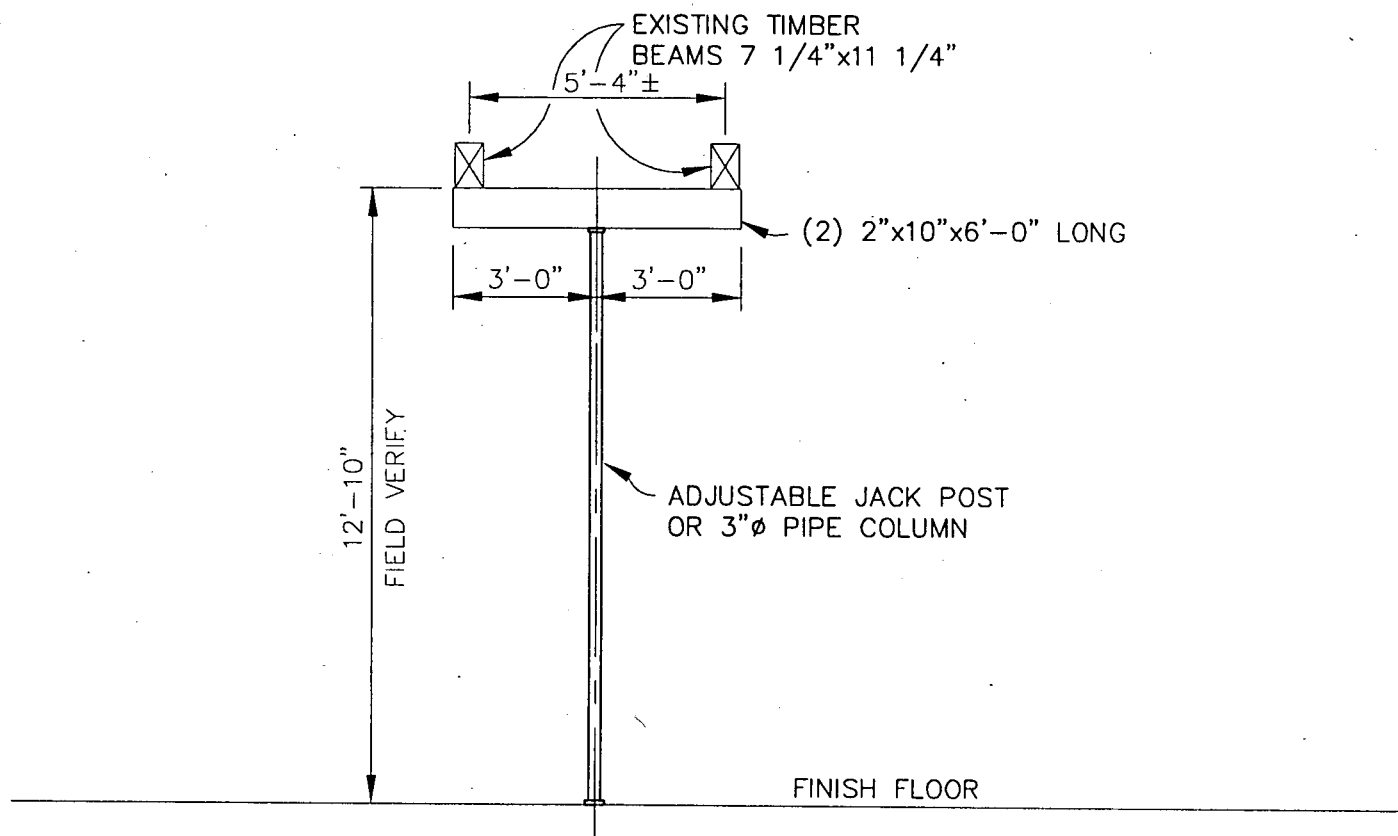
TIMBER BEAM HAS FAILED  
AT BRICK SUPPORT AND MUST  
BE JACKED AND GROUTED AT  
BRICK WALL



**AREA 3-BUILDING ELEVATION  
LOOKING NORTH**

SCALE: 1/4" = 1'-0"

(FRAME LINE 32)

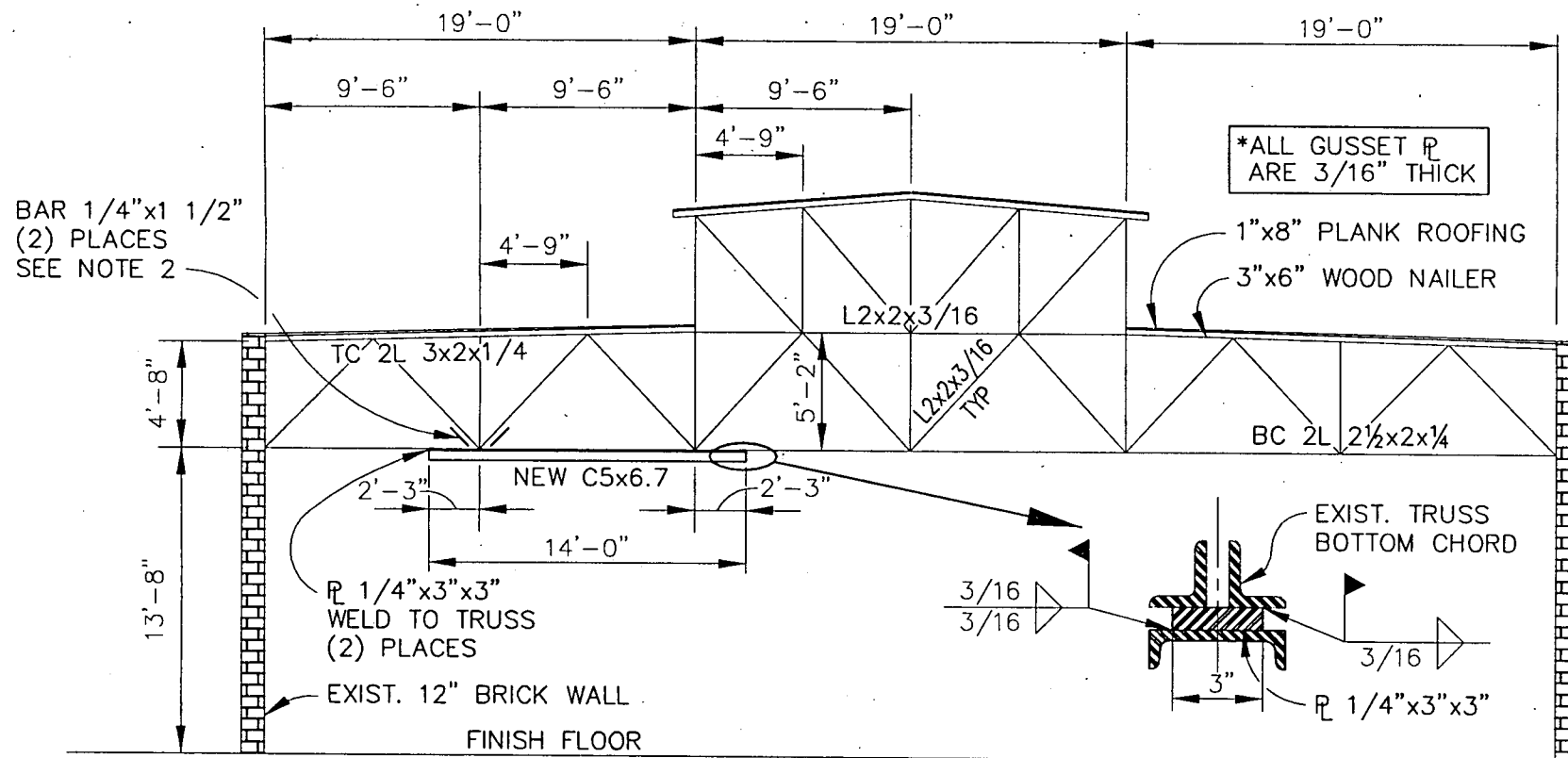


NOTE:  
SHORING MUST BE INSTALLED  
ON EAST SIDE OF VERTICAL  
CRACK

## AREA 3-TYPICAL SHORING DETAIL AT WOOD BEAMS

SCALE: 1/4" = 1'-0"

EARTH  TECH



**NOTES:**

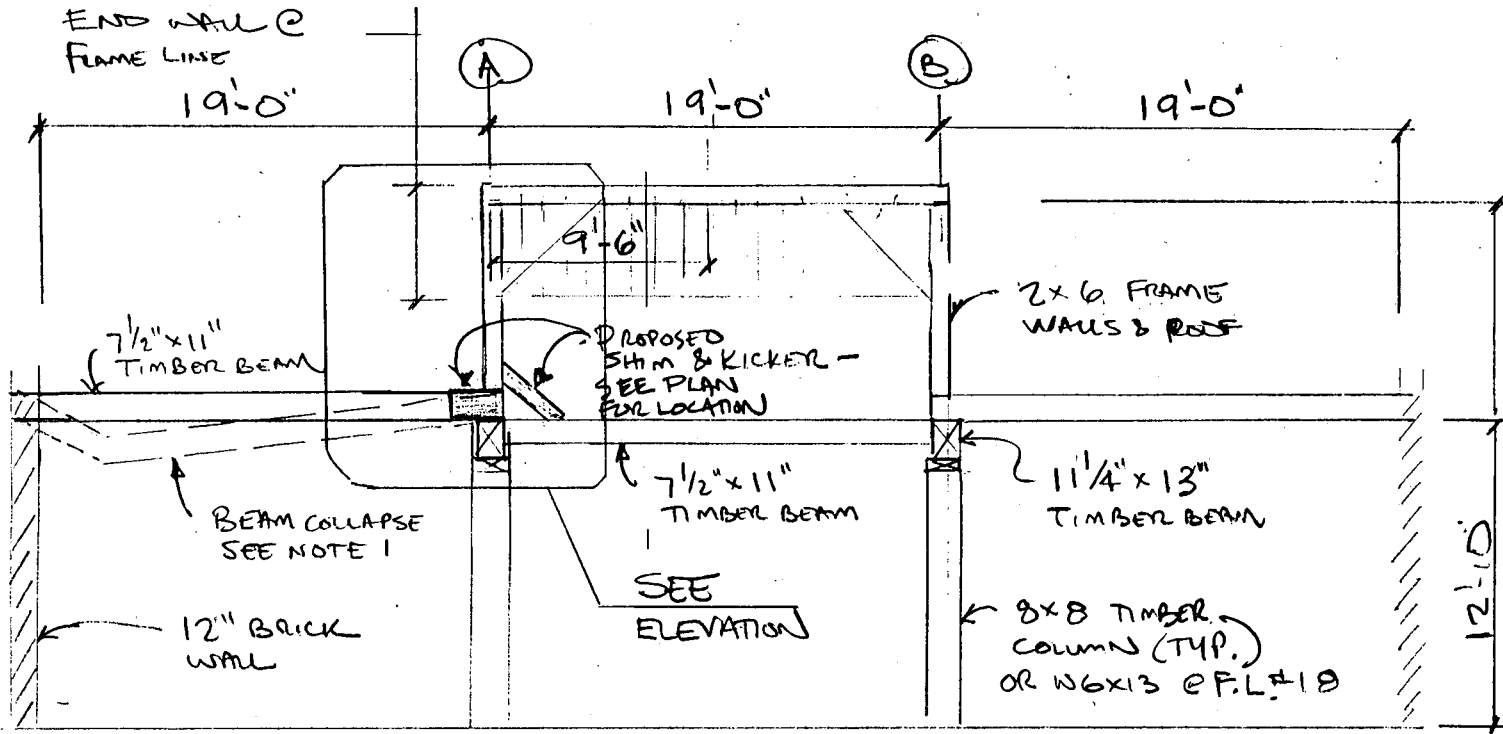
1. CLEAN ALL SCALE FROM SURFACES PRIOR TO WELDING
2. PLACE 1/4"x1 1/2" BARS ON TRUSS ONLY
3. E70XX ELECTRODES
4. A36 STEEL

## AREA 2-BUILDING ELEVATION LOOKING SOUTH

SCALE: 1/8" = 1'-0"  
(TYPICAL 2 PLACES)

# Calculation Sheet

Computed by WSS Subject Area 3 Sheet 1 of 2  
 Checked by \_\_\_\_\_ Client Bossco 14th Co. Job No. 24702 Date \_\_\_\_\_



AREA 3 - BUILDING  
ELEVATION LKG. NORTH



# Calculation Sheet

Computed by MSS

Subject TRIMMER ROOM

Sheet 2 of 2

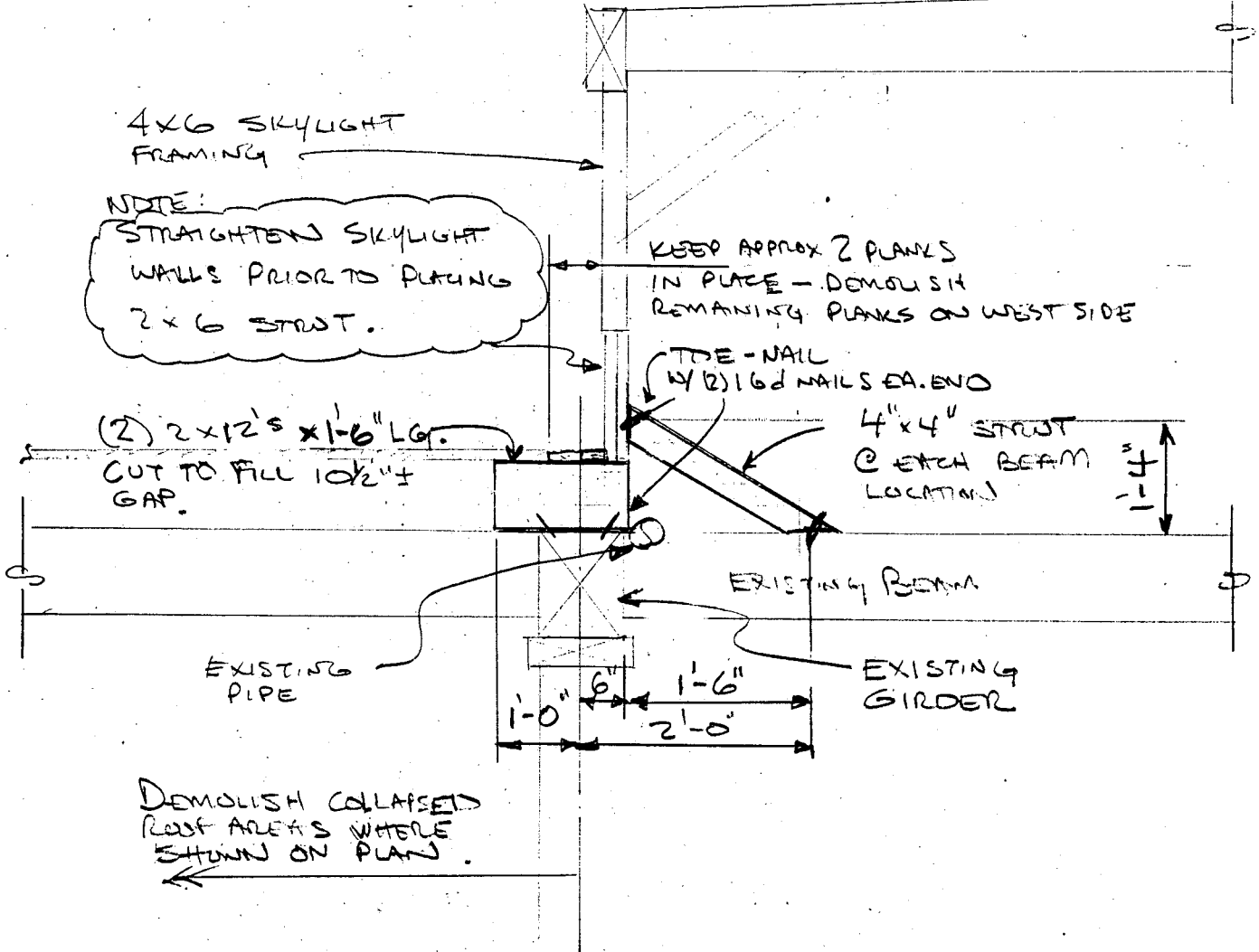
Checked by \_\_\_\_\_

Client AREA 3

BOSSERT MFG.

Job No. 24708

Date 11/7/97



ELEVATION AT BEAM LOCATIONS

NORTH OF FRAME LINE 34

(LOOKING NORTH)

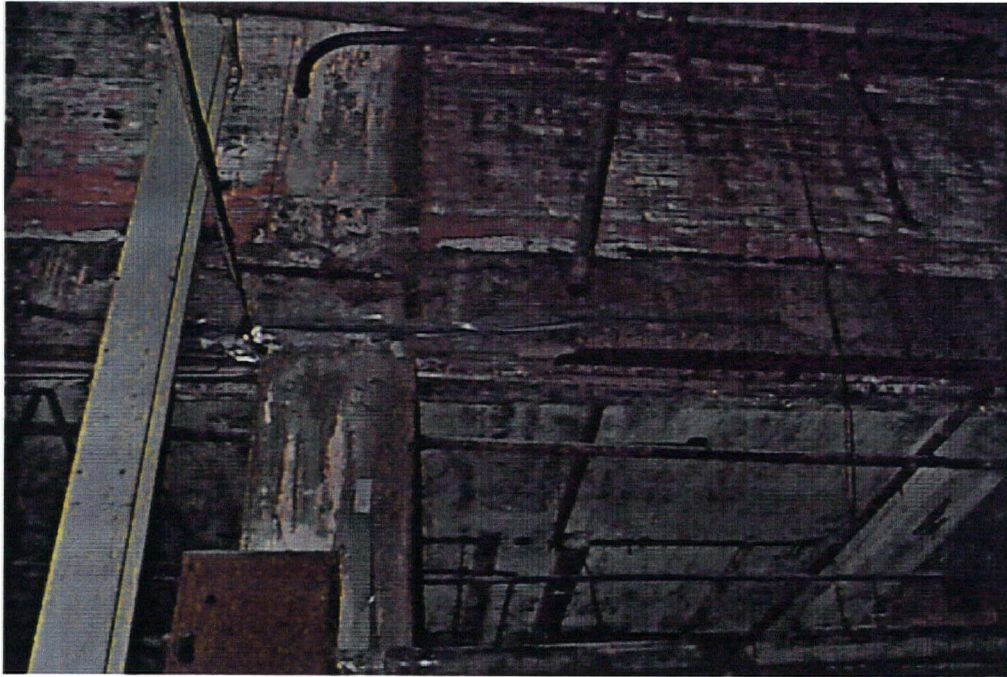
## ***PHOTOGRAPHS***

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**BOSSERT/EPA SITE, UTIC NY**  
**PHOTOGRAPH DESCRIPTIONS - AREAS 10, 11, & 12**

IMAGE NO.	AREA NO.	DESCRIPTION
1	12	Concrete beam is cracked with exposed rebar. North side of building. No repairs are needed because the beam is considered safe.
2	12	Same as Image No. 1. No repair is required.
3	12	Wood beam has failed near brick wall. East side of building. Repairs should be made per Detail <u>2 &amp; 3</u> of this report.
4	12	Roof Collapse has caused instability of structural frame. See Detail <u>16</u> for repairs.
5	12	Roof failure has cause unstable support columns. Repair per Detail <u>16</u> .
6	12	Loss of beam lintel support at brick wall. Repair per Detail <u>18</u> .
7	12	Roof purlin failure and broken roof sheathing. Repair per Detail <u>13</u> .
8	12	Brick wall has missing or loose brick. Repair per Detail <u>12</u> .
9	12	Severe brick loss at areas of roof support columns. Repair per Detail <u>12</u> .
10	12	Broken wood beam. Repair per Detail <u>2 &amp; 3</u> .
11	10/11	Exterior walls of brick wall are in poor condition. There is to much window area to provide adequate structural support of roof. Demolish second floor walls and roof as described in Report.
12	10/11	Same description as #11.
13	10/11	Same description as #11.
14	10/11	Same description as #11.
15	10/11	Same description as #11.
16	10/11	Same description as #11.
17	10/11	Exterior surface of brick wall. Demolish as described
18	10/11	Exterior surface of brick wall. Demolish as described
19	12	Roof timber beam broken. - Repair per Detail <u>17A</u> .
20	12	Timber beam broken off at wall support - See Plan Item <u>14</u> .





**IMAGE NO. 1**



**IMAGE NO. 2**

**AREA 12**





IMAGE NO. 3



IMAGE NO. 4

AREA 12



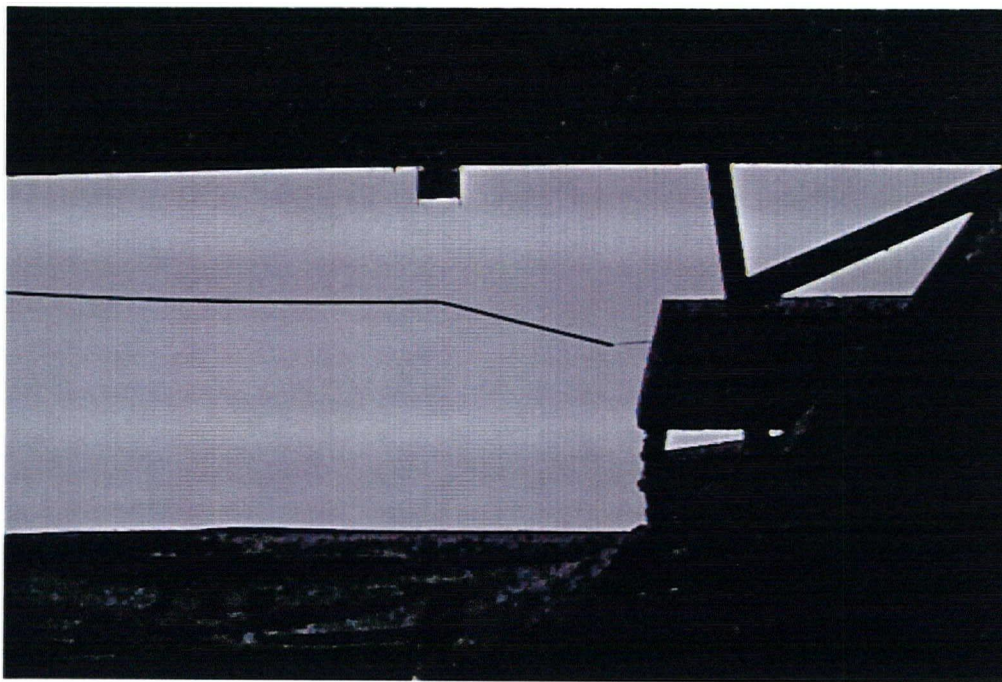


IMAGE NO. 5



IMAGE NO. 6

AREA 12





IMAGE NO. 7



IMAGE NO. 8

AREA 12





IMAGE NO. 9

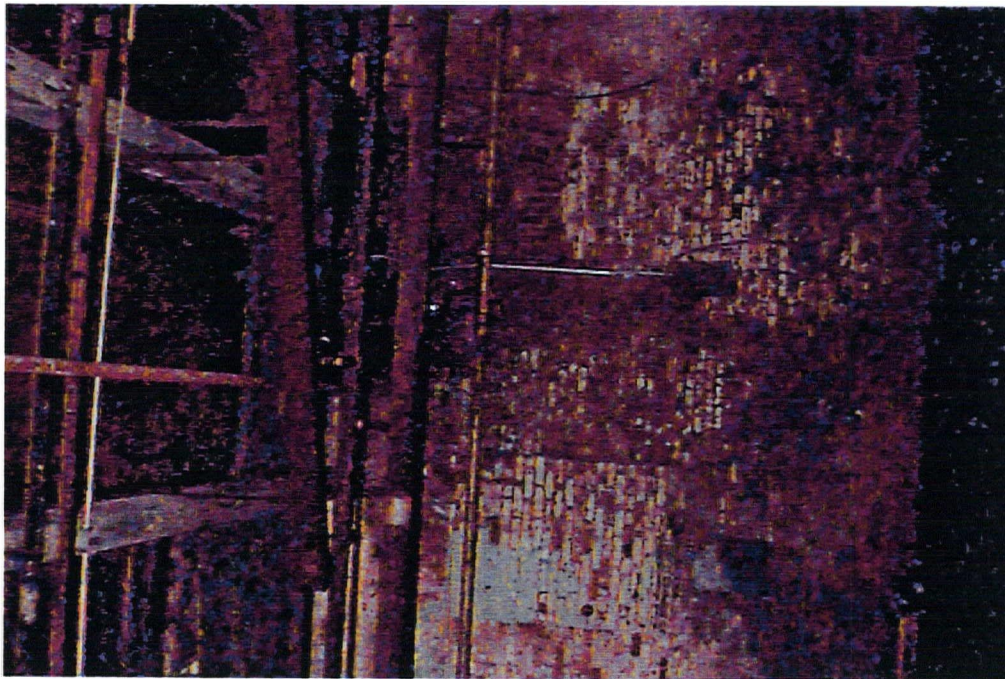


IMAGE NO. 10 (THIS END DOWN)

AREA 12





IMAGE NO. 11



IMAGE NO. 12

AREA 10 & 11





IMAGE NO. 13



IMAGE NO. 14

AREA 12





IMAGE NO. 15



IMAGE NO. 16

AREA 10 & 11





**IMAGE NO. 17**



**IMAGE NO. 18**

**EXTERIOR AREA 10 & 11**





IMAGE NO. 19



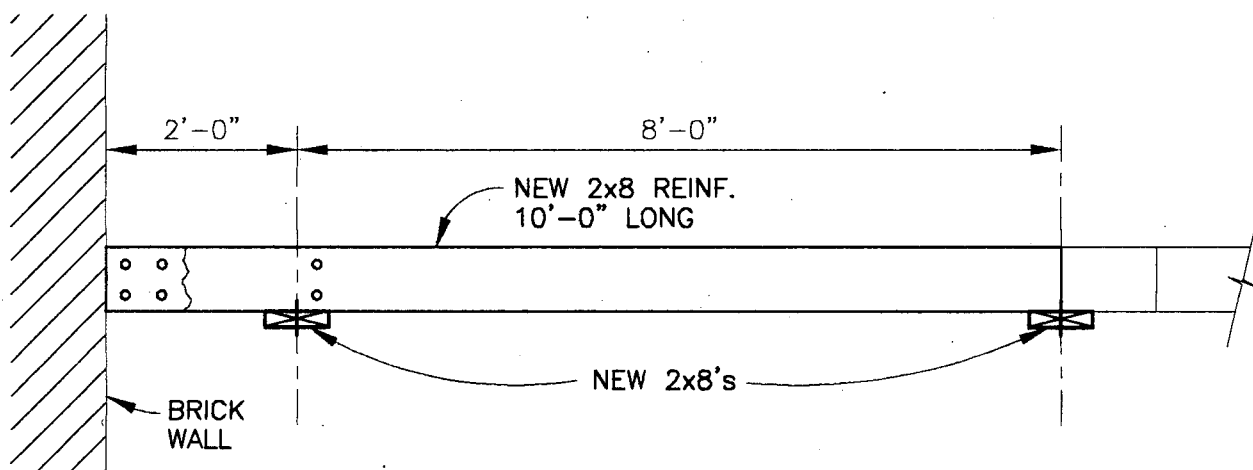
IMAGE NO. 20

AREA 12

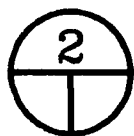
EXISTING TIMBER  
BEAMS (TYP.)

NEW 2x8 REINFORCERS  
LAP 12" BEYOND

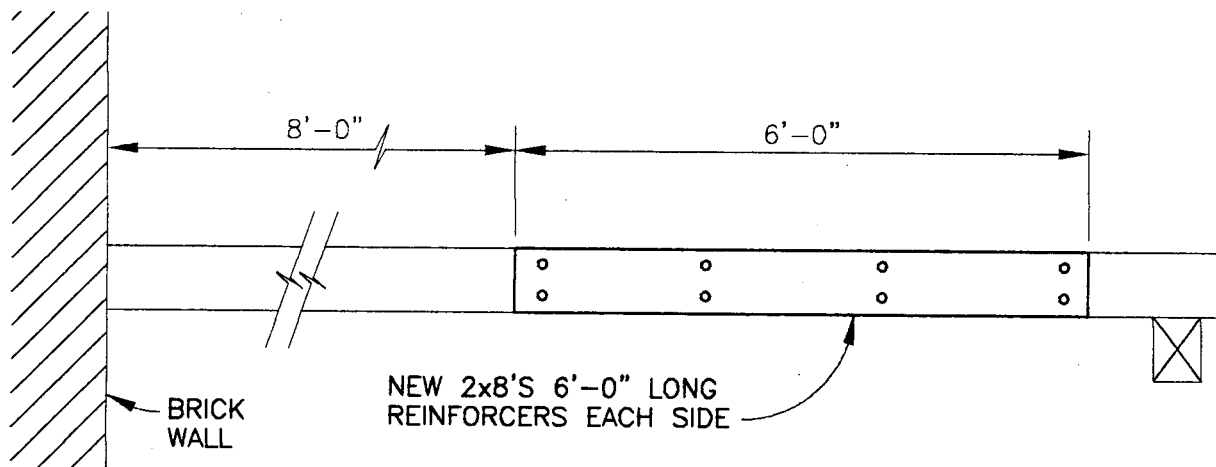
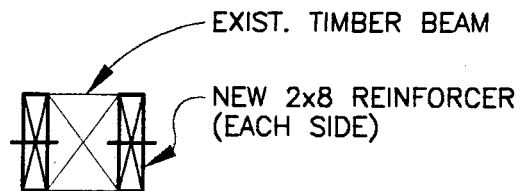
NEW 2x8 - NAIL TO  
UNDERSIDE OF EXISTING  
TIMBER BEAMS (2 PLACES  
WHERE SHOWN ON PLANS)



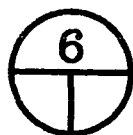
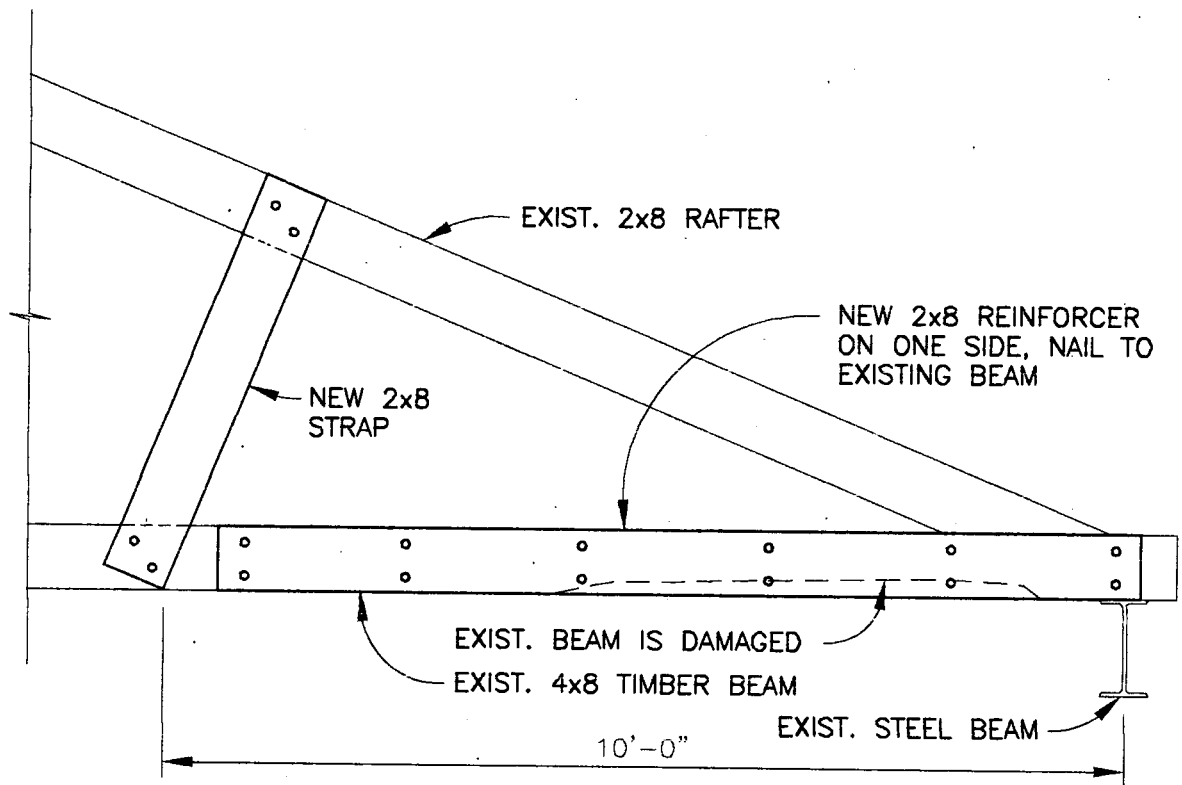
(SIDE VIEW)



DETAIL

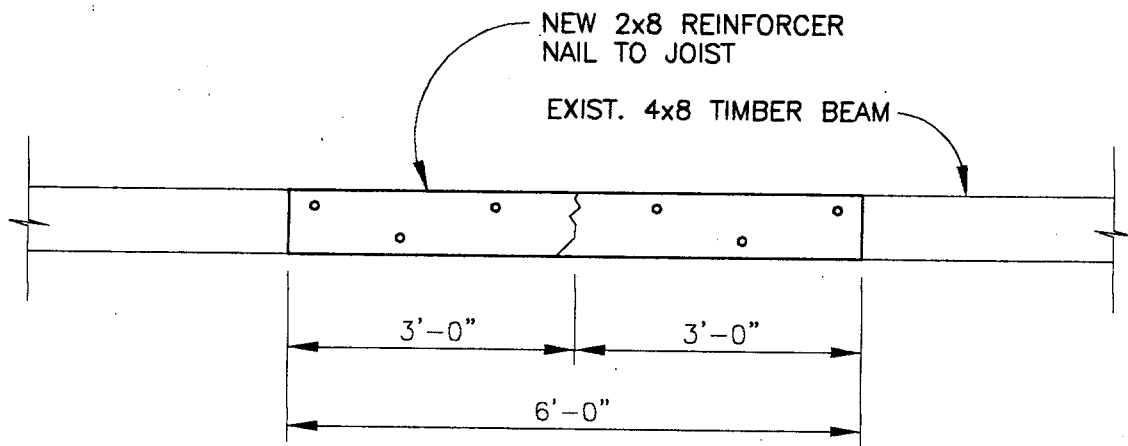


DETAIL



**DETAIL**

SCALE: 1/2" = 1'-0"



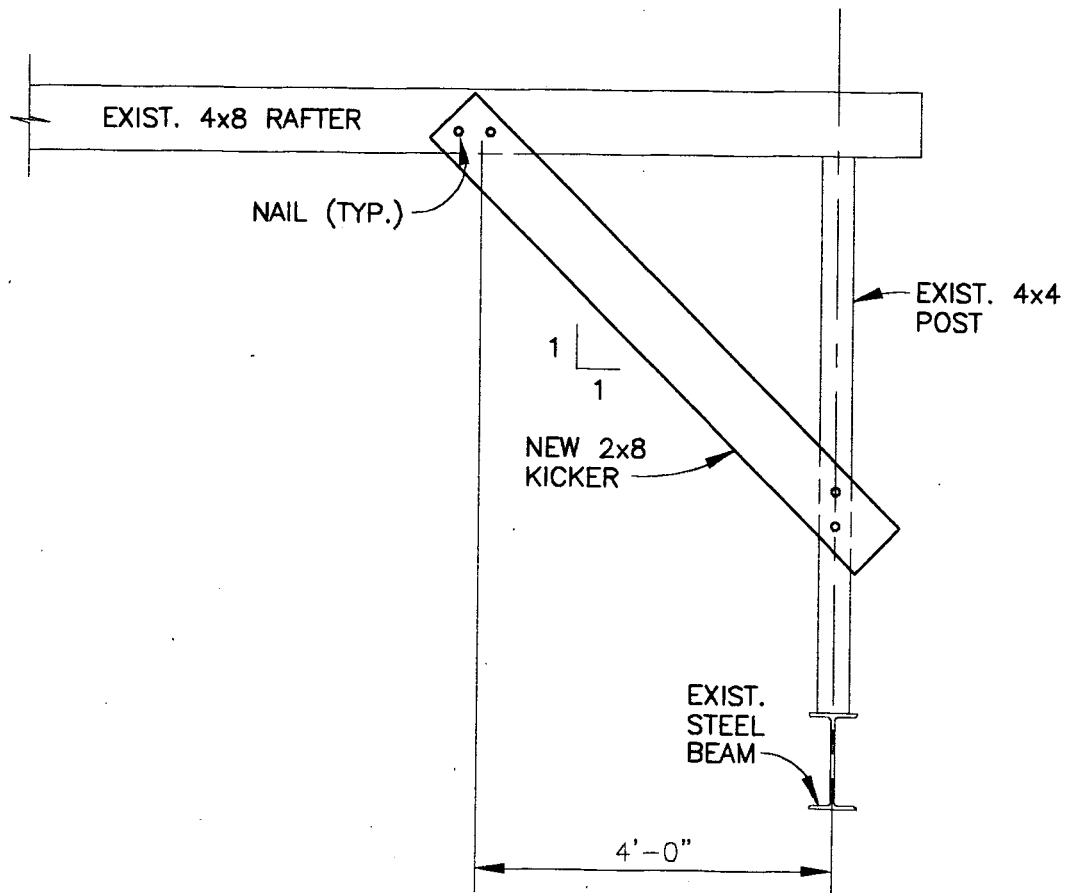
DETAIL

(2 LOCATIONS)



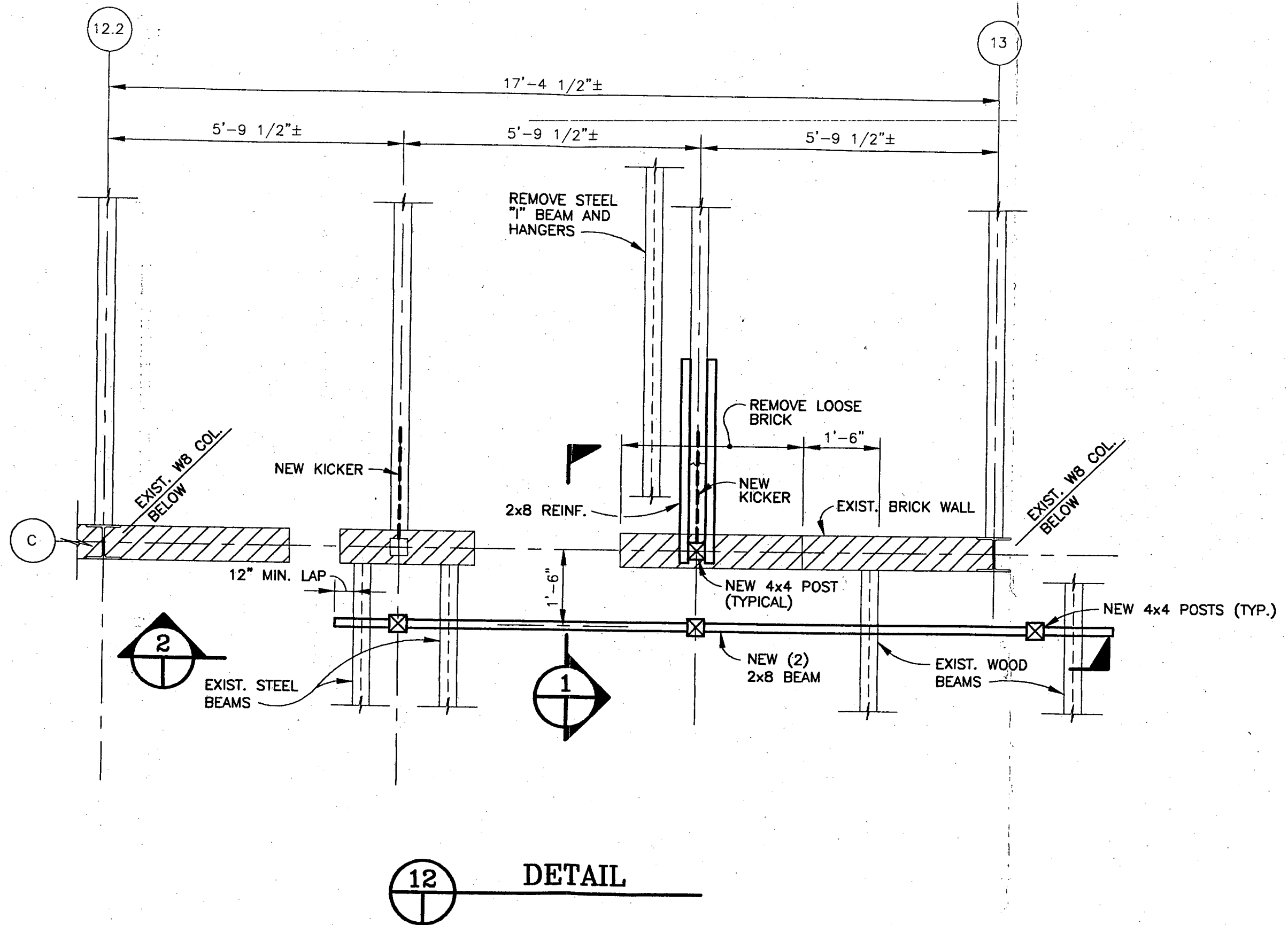
DETAIL

(5 LOCATIONS)

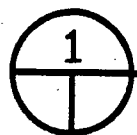
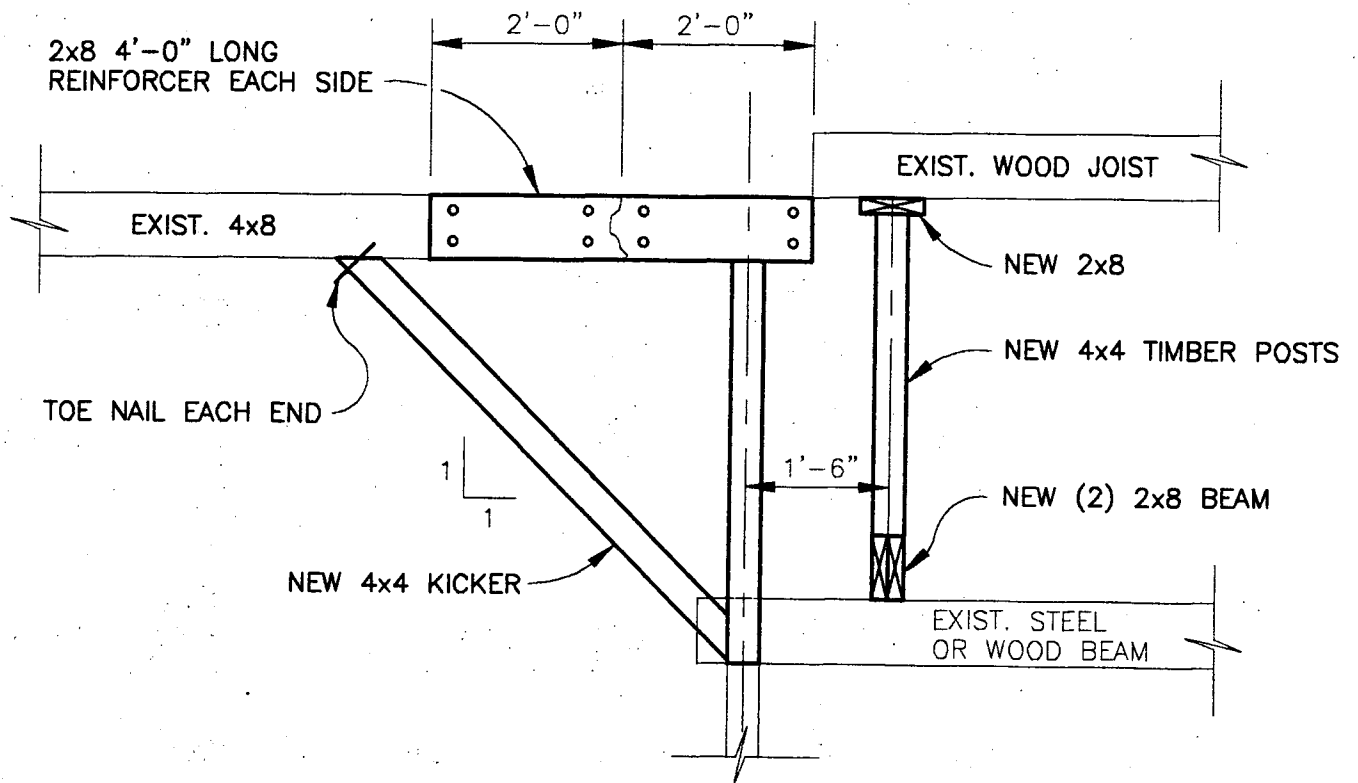


## DETAIL

SCALE:  $\frac{1}{2}" = 1'-0"$   
(2 LOCATIONS)



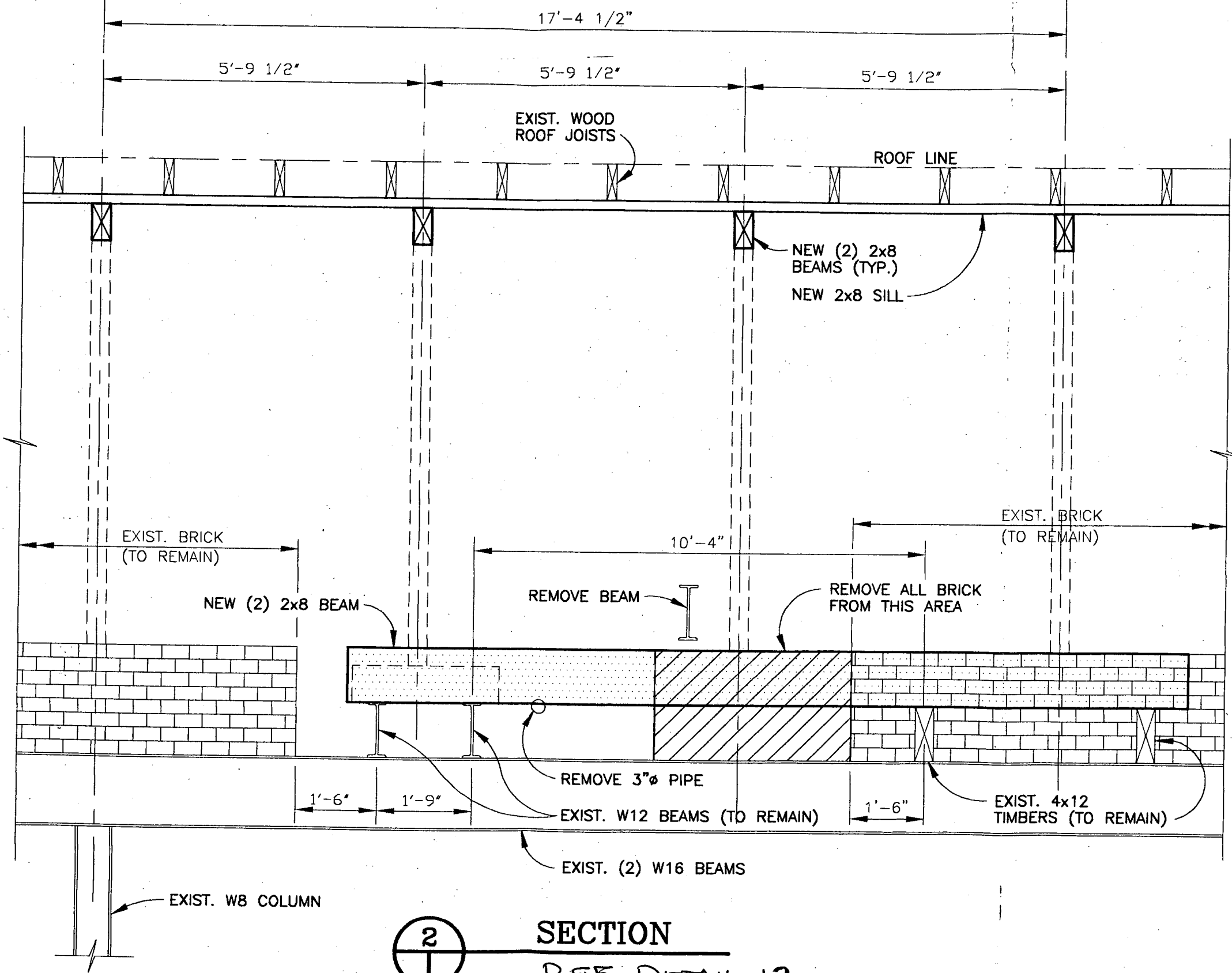




SECTION  
REF. DETAIL 12

12.2

13



2

SECTION

REF. DETAIL 12



# Calculation Sheet

Computed by MSS

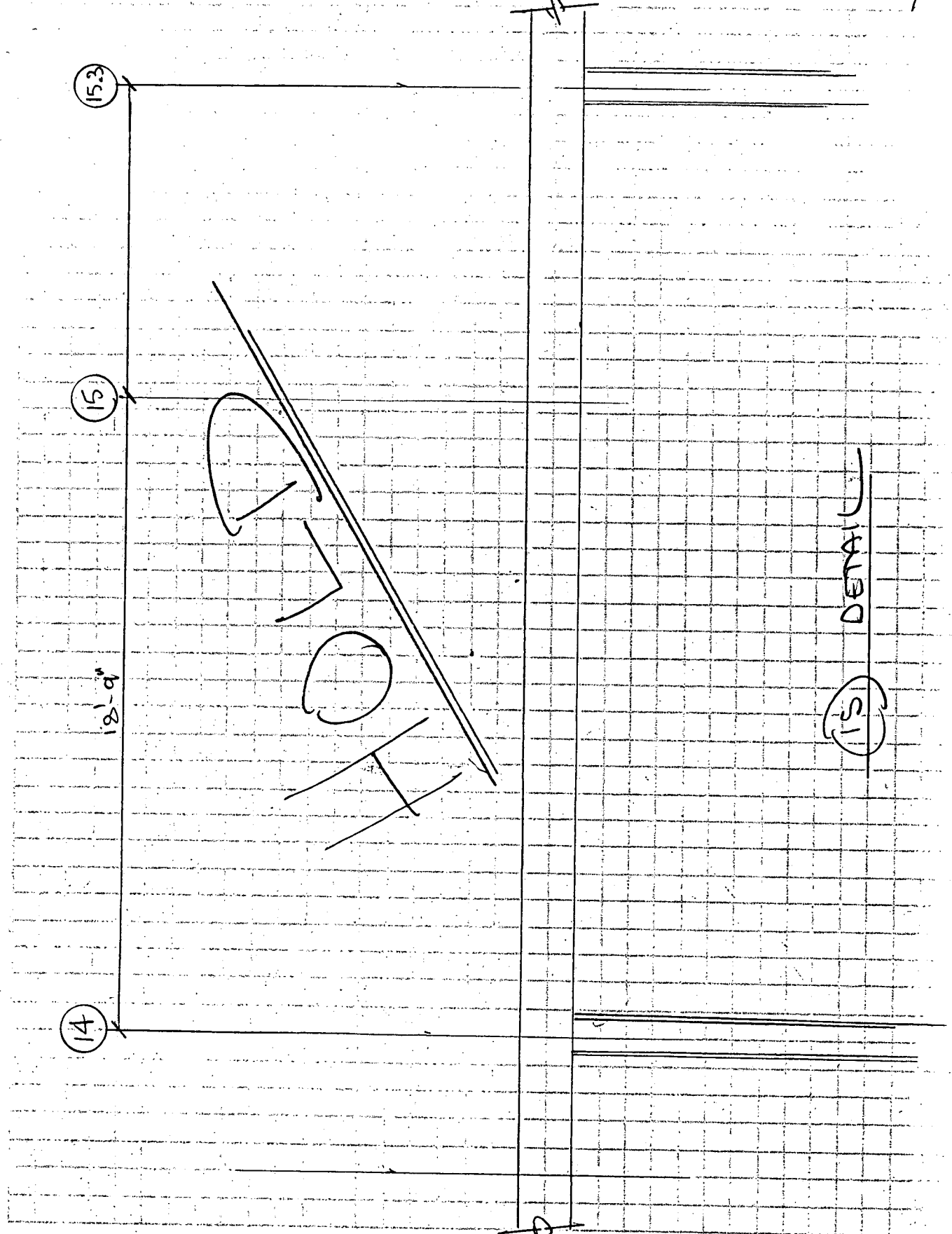
Subject Blwy 12 - Prosser Sheet 1 of 1

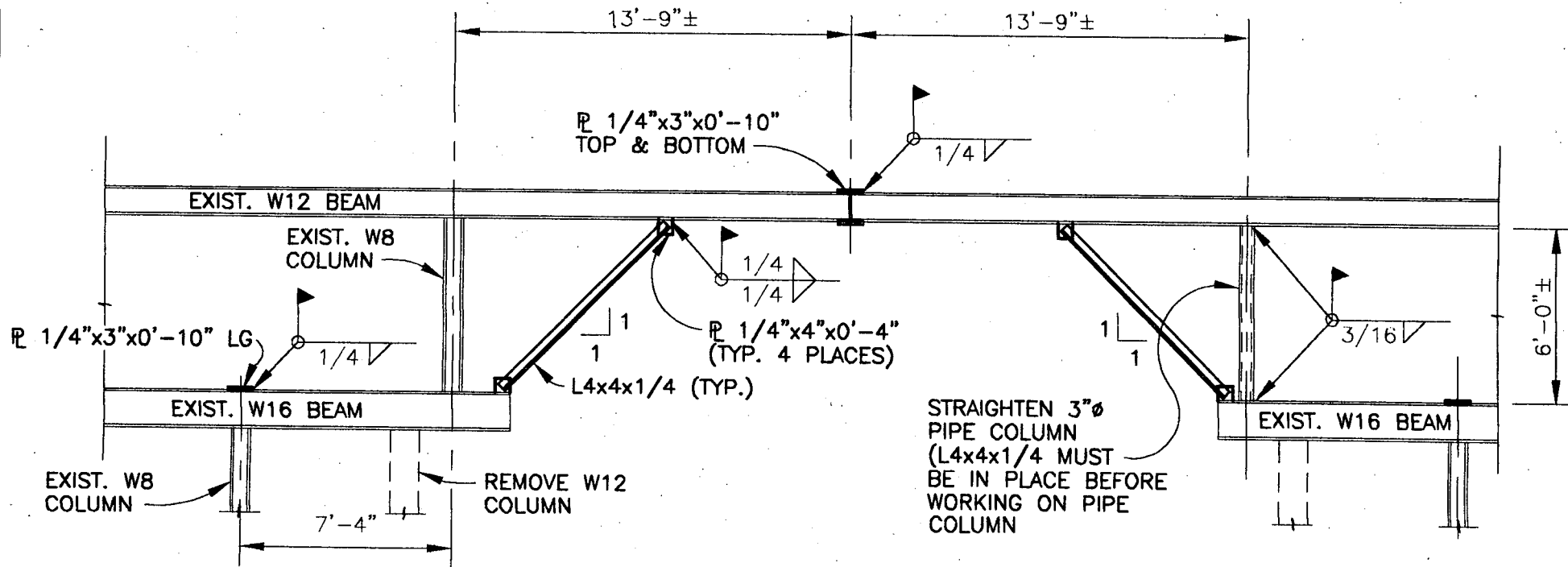
Checked by \_\_\_\_\_

Client Bassett-EPA

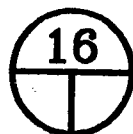
Job No. \_\_\_\_\_

Date 3/98





NOTE: 1/4" TOP BEAM PLATE  
AND L4x4x1/4 KICKER MUST  
BE IN PLACE BEFORE REMOVING  
W12 COLUMNS



DETAIL

**Calculation  
Sheet**

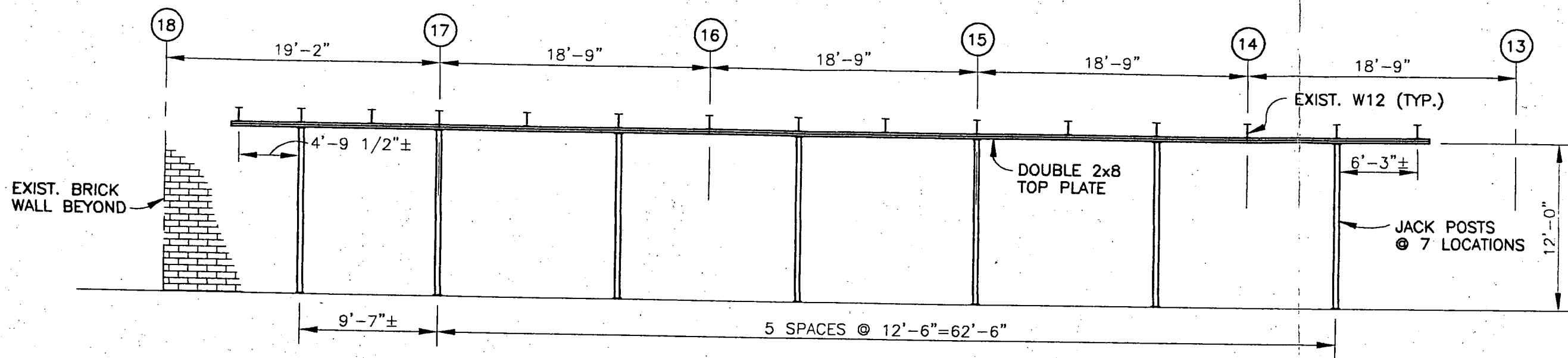
Computed by \_\_\_\_\_ Subject \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_  
Checked by \_\_\_\_\_ Client \_\_\_\_\_ Job No. \_\_\_\_\_ Date \_\_\_\_\_

HOLD

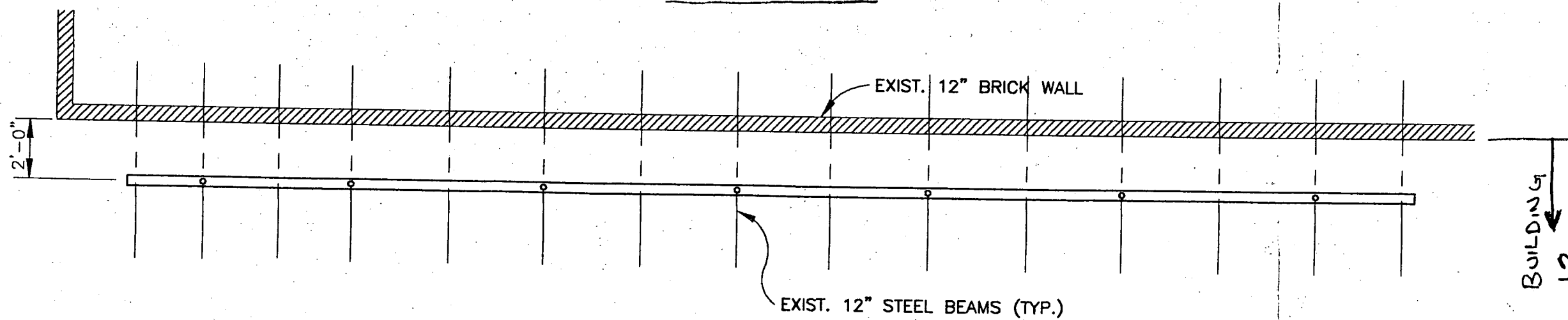
DETAIL 17

HOLD

DETAIL 17A



ELEVATION

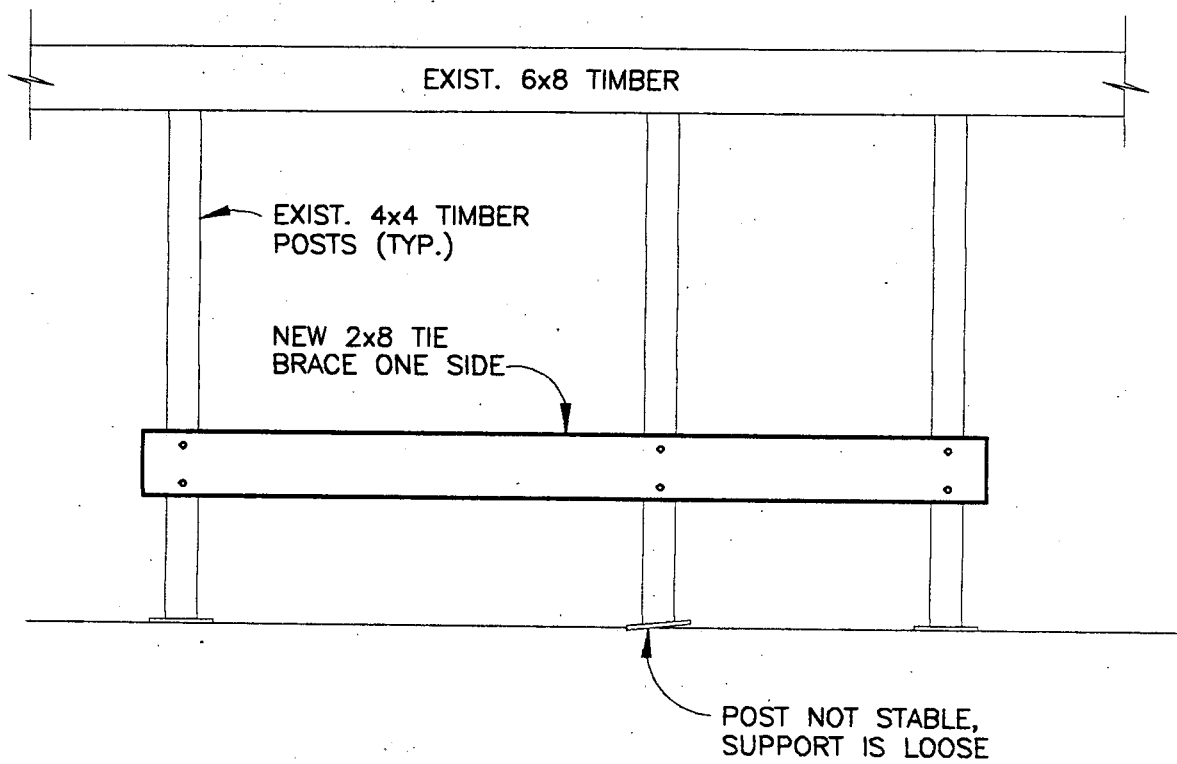


PLAN



**DETAIL**

SCALE: 1/8" = 1'-0"



# M e m o

Date: November 7, 1997

To: Earth Tech Remediation Services Division

cc: D. Esch - Earth Tech  
J. Hermon - EPA

From: Mark S. Servinsky 

Subject: Former Bossert Mfg. Company, Utica, NY Demolition Cost Estimate

We have tabulated the site measurements in order to develop an engineering estimate for "Selective Building Demolition" at the site. Earth Tech building elevation measurements were taken and coupled with plan measurements taken. These dimensions are listed in the attached spreadsheet. Please distribute this document to the individuals involved.

The following comments may be helpful to you in studying the spreadsheet estimate:

1. Demolition volume includes all materials such as HVAC equipment, ductwork, machinery, etc. It also includes exterior walls and interior structural frames.
2. The Means Cost Data Book, 1997 was used to develop the estimate.
3. The total cost of demolition should be increased by a 10 or 20 per cent contingency.
4. Scrap value of steel and other materials is included in the "Means" number.
5. Dumping fee is not included, however a 20 mile haul of material to dump is included.
6. Cost index for Utica, NY is 94.6% of National average.
7. Concrete buildings have a higher cost associated with demolition. This is shown as a higher "Means" factor on the spreadsheet.
8. Hazardous Material Abatement and hauling and disposal of hazardous materials is not included.
9. Concrete base slabs are assumed to remain (no demolition required).

The spread sheet should be used as an "Engineering Estimate" and a benchmark for which future demolition bids should be compared. Earth Tech recommends that this estimate be made available to all bidders if work is to be competitively bid. Although a "best effort" was made to establish accurate building measurements, the dimensions are considered approximate for use in the estimate.

Please call me if you wish to discuss the estimate further. I can be reached at (616) 975-4632.

Attachments: Spreadsheet pages 1&2  
Means Cost & City Cost Index  
Sketches 3 sheets (Earth Tech)



A tyco INTERNATIONAL LTD. COMPANY



TABLE II  
ENGINEERING COST ESTIMATE FOR BUILDING  
AT BOSSERT MFG. CO EPA SITE  
UTICA, NY

ROOM NO.	STRUCTURE/ BUILDING DESIGNATION	APPROXIMATE PLAN W (ft.) x L (ft.)	APPROXIMATE PLAN AREA A (sq. ft.)	EST OF BUILDING VOLUME					EST OF RUBBLE VOLUME		
				AVERAGE HEIGHT H (ft.)	VOLUME V = A X H (cu. ft.)	NUMBER OF FLOOR LEVELS	MEANS 1997 UNIT COST C (\$/cu. ft.)	ITEMIZED DEMO COST = I V x C (\$)	ESTIMATED RUBBLE VOLUME R = 10% x V 27 (cu. yd.)	NO. OF 10 cu. yd. TRUCK HAULS	ESTIMATED HAULING COST 13.74 x R (\$)
1	Assembly Rm.	140 x 63	8,820	24	211,680	2	0.218*	\$46,146	784	79	\$10,772
2	Trimming Rm.	159 x 57***	9,063	17.5	158,602	1	0.218	\$34,575	587	59	\$8,065
3	Trimming Rm.	288 x 57****	16,416	13	213,408	1	0.218	\$46,523	790	79	\$10,854
4	Shipping Rm.	75 x 105	7,875	26	204,750	2	0.218	\$44,636	758	76	\$10,414
5	Concrete Pad	To Remain in Place	---	---	---	---	0.218	\$0	---	---	---
6	---	Non-Designated No Work	---	---	---	---	0.218	\$0	---	---	---
7	Storage Rm.	119 x 63	7,497	31	232,407	2.5	0.218	\$50,665	861	87	\$11,830
8	Boiler Rm.	75.5 x 42	3,171	13	41,223	1	0.218	\$8,987	153	16	\$2,102
9	Stock Storage	29 x 130	3,770	12	45,240	1	0.218	\$9,862	167	17	\$2,295
10	Grinding Rm.	105 x 65	6,825	26	177,450	1	0.218	\$38,684	657	66	\$9,027
11	Welding Rm.	85 x 105	8,925	26	232,050	2	0.218	\$50,587	859	86	\$11,802
12	Press Rm.	260 x 170	44,200	26	1,149,200	2	0.218	\$250,526	4,256	426	\$58,477
13	Die Storage	See Detail	12,070	26	313,820	2	0.218	\$68,413	1,162	117	\$15,965
14	Pickling/Press	40 x 85	3,400	12	40,800	1	0.18	\$7,344	151	16	\$2,074
15	Cooling Rm.	See Details*****	7,000	12	84,000	1	0.18	\$15,120	311	31	\$4,273
16	Annealing	82.5 x 150	12,375	18	222,750	1	0.218	\$48,560	825	83	\$11,336
17	---	Non-Designated No Work	---	---	---	---	---	\$0	---	---	---
18	Storage	160 x 100	16,000	24	384,000	2	0.218	\$83,712	1,422	143	\$19,538
19	Machines/Offices	128 x 70	8,960	24	215,040	2	0.218	\$46,879	796	80	\$10,937
	Chimney	10' x 10' at base	100	120	12000	---	0.15	\$1,800	est. 400	20	\$5,496
TOTALS									14,939		\$205,257

\* Means Cost Data, 1997, Item 020-604-0100 Mixed Materials \$.23/cf includes overhead & profit x 0.946 = 0.218.

\*\* Means Item 020-604-0050-Concrete - includes overhead & profit.

\*\*\* Area 2 - Steel Trusses with wood roof plank & brick walls.

\*\*\*\* Area 3 - Wood beam roof with wood roof plank & brick walls.

\*\*\*\*\* Area 15 - Wood siding with light steel columns and wood roof. Approximately 50% of original area (100' x 140') remains due to collapsed area. 50% x 14,000 sf = 7,000 sf chimney estimate is best guess cost excluding rubble hauling.

Estimate of Rubble Volume is from "Richardson Process Plant Construction Estimating Standards" - Volume 1, Sections 2 - 23 and 2 - 100.

Hauling cost includes \$5.50/cu. yd. dump fee plus \$8.24/cu. yd. haul = \$13.74/cu. yd., 10 cu. yd. truck, hazardous material charges not considered.

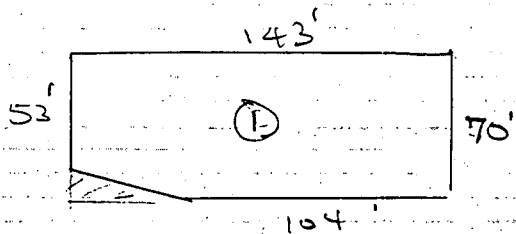


# Calculation Sheet

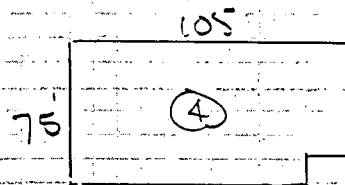
Computed by MSS Subject DEMOLITION FLOOR AREAS Sheet 1 of 2  
 Checked by \_\_\_\_\_ Client \_\_\_\_\_ Job No. \_\_\_\_\_ Date \_\_\_\_\_

## ROOM DIMENSIONS

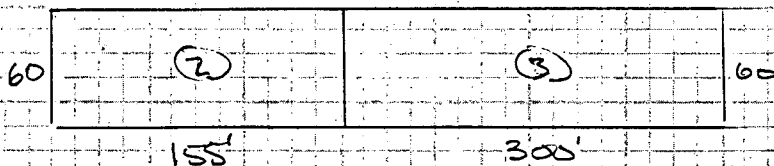
ESTIMATED FROM DWGS



$A = 9678 \text{ sq'}$   
 Ref. Dwg. BR5



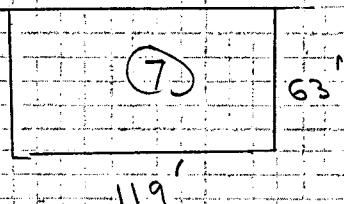
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 Ref. Dwg. BR6



$A = 9300 \text{ sq'}$

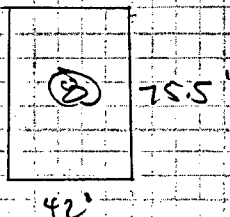
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Ref. Dwg. BR6

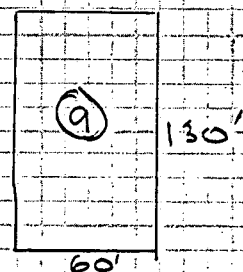


$A = 7497 \text{ sq'}$

Ref. Dwg. BR6

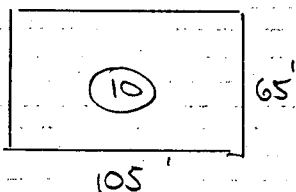


$A = 3171 \text{ sq'}$



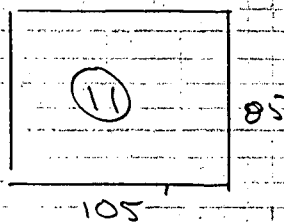
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Ref. Dwg. BR6



$A = 6825 \text{ sq'}$

Ref. Dwg. BR6



$A = 8925 \text{ sq'}$

Ref. Dwg. BR6



A tyco INTERNATIONAL LTD. COMPANY

# Calculation Sheet

Computed by MSSSubject DEMOLITION FLOOR AREASSheet 1 of 2

Checked by \_\_\_\_\_

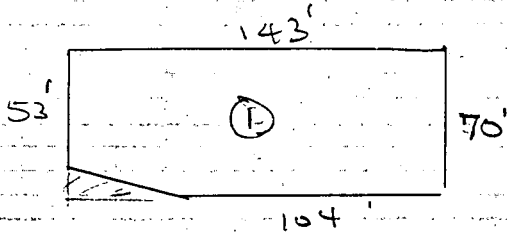
Client \_\_\_\_\_

Job No. \_\_\_\_\_

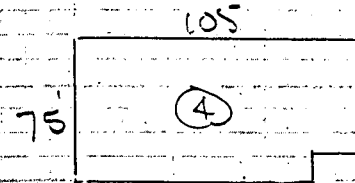
Date \_\_\_\_\_

ROOM DIMENSIONS

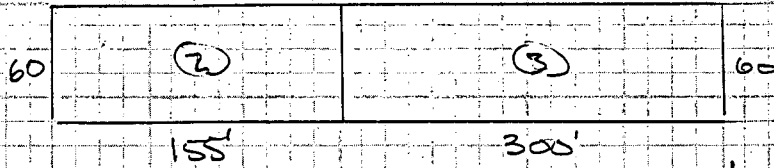
ESTIMATED FROM DWGS



$$A = 9678 \text{ sq'} \\ \text{Ref. Dwg. BR5}$$



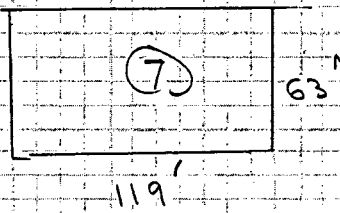
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$$A = 9300 \text{ sq'}$$

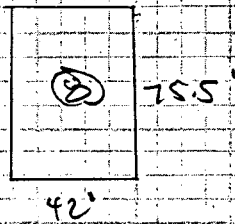
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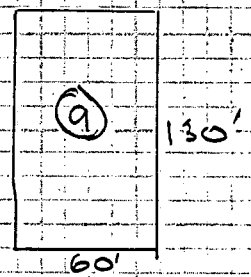


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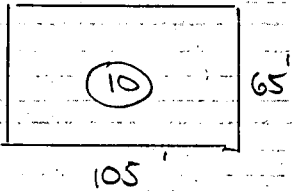


$$A = 3171 \text{ sq'}$$



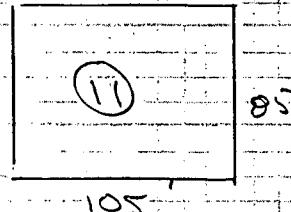
$$A = 7800 \text{ sq'}$$

Ref. Dwg. BR6



$$A = 6825 \text{ sq'}$$

Ref. Dwg. BR6



$$A = 8925 \text{ sq'}$$

Ref. Dwg. BR6

# Calculation Sheet

Computed by MSBSubject STRUCTURAL MODIFICATIONSSheet 1 of 2

Checked by \_\_\_\_\_

Client BOSSANT - EPA SITE

Job No. \_\_\_\_\_

Date 3/98Building 12 - PRESS ROOM

ITEM NO.	PROBLEM	RECOMMENDED REPAIR
①	Excessive load on timber beams	Remove Fan and support brackets See Plan Detail <u>1</u> .
②	Damaged timber beam	Repair per Detail <u>2</u> .
③	Damaged timber beam	Repair per Detail <u>3</u> .
④	Excessive load on timber beams	Remove (2) Tanks See Plan Detail <u>4</u> .
⑤	Excessive load on timber beams	Remove tank See Plan Detail <u>5</u> .
⑥	Damaged timber beam	Add a 2x8 SMOE between timber beam and rafter. See Detail <u>6</u> .
⑦	Broken timber joist	Repair per Detail <u>7</u> .
⑧	Column is out of plumb and loose at base.	Straighten column and grout under base plate. See Plan Detail <u>8</u> .
⑨	No beam connection Beam end is loose	Weld the existing clip angle to the beam. See Plan-Detail <u>9</u> .
⑩	Short timber beam is not straight	Re-align beam and tie nail to Supporting beam. See Plan-Detail <u>10</u> .
⑪	Missing 2x6 Kicker	Add 2x8 Kicker at (2) locations See Detail <u>11</u>
⑫	a. Missing Kicker & missing 4x4 post b. Loose and missing brick c. Broken joist bearing P d. Rotted Timber beam	Add Posts & Kickers per Detail <u>12</u> Remove brick where shown on Detail Place wood to support EXIST. wood Joists per Detail <u>12</u> Add 2x8 Reinforcer on each side.



# Calculation Sheet

Computed by MSSSubject Structural ModificationsSheet 2 of 2

Checked by \_\_\_\_\_

Client Bossert-EPA

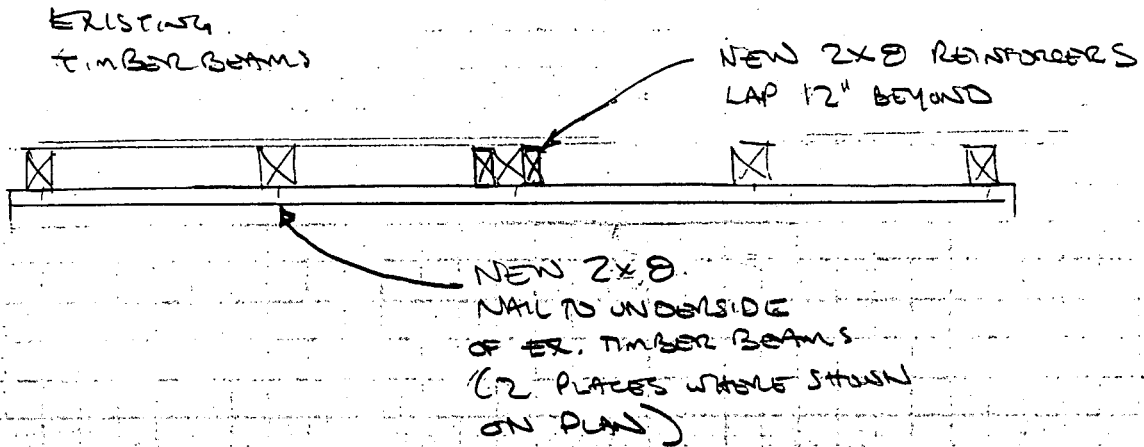
Job No. \_\_\_\_\_

Date 3/99

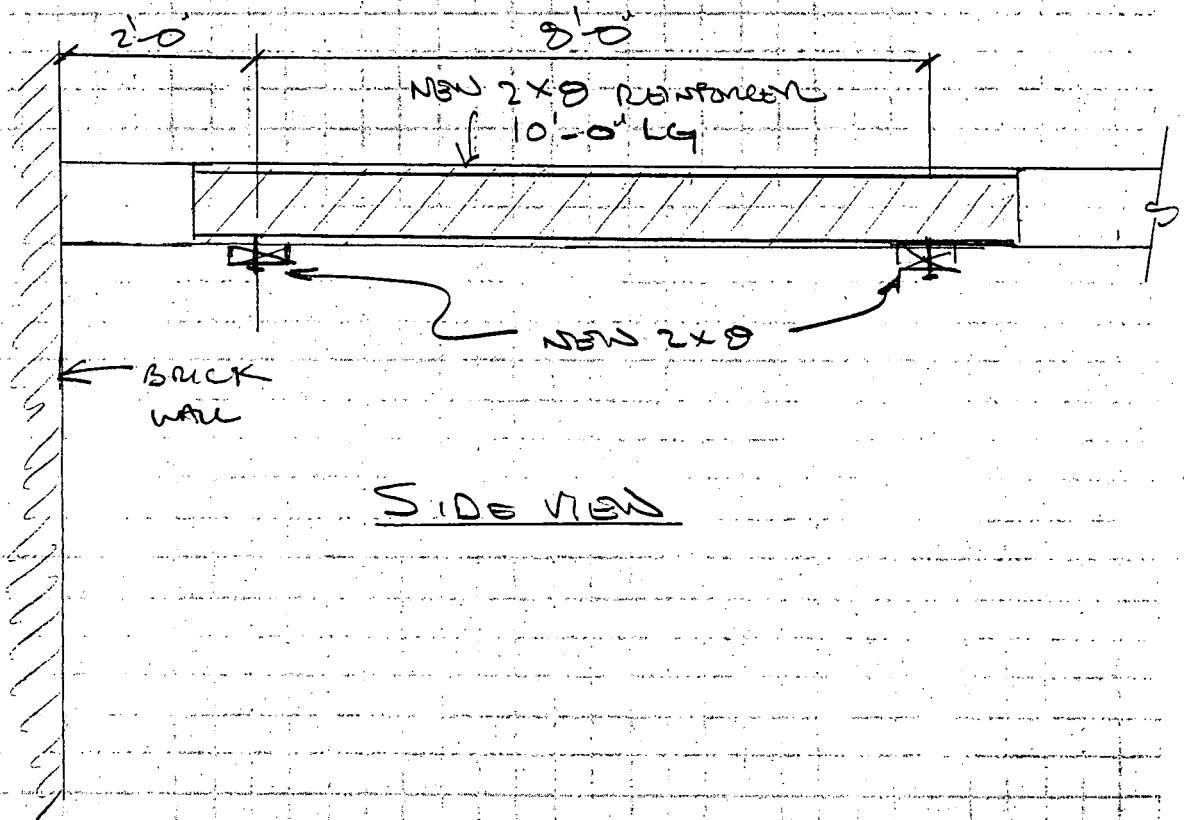
ITEM NO	Problem	Recommended Repair
13	(5) wood joists are broken	Nail 2x8 reinforcers on one side of each joist. See Detail 13.
14	Timber beam broken off at wall support.	Add jack post to underside of beam 2'-0" from end. See Plan Detail 14.
15	Crib wall is badly damaged. Vertical 4x4 posts and kilbers are loose or missing. Joist bearing P is damaged.	Remove all overhanging roof materials and straighten crib wall. Re-attach timbers that are loose. Add support upper joist bearing plate. See Detail 15.
16	a. steel pipe column is not plumb b. Steel beams are not connected together c. Loose w12 column	straighten & weld structural angle as shown in detail 16. Weld top and bottom plates to beam. Weld top plate to top of beam, Add structural angle, then remove w12 column.
17	Roof timber has slipped off its bearing end	Jack-up beam to original position. Add 2x8 on one side. See Detail 17. See Plan
18	Beams are not adequately supported because brick wall is severely damaged.	Add jack posts and timbers to support underside of steel beams. See Detail 18.
19	Timber frame not adequately braced	Add Brace per Detail 19.

## Calculation Sheet

Computed by MSS Subject BODG 12 - PRESS RM Sheet 1 of 1  
 Checked by \_\_\_\_\_ Client Boswell - EPA Job No. \_\_\_\_\_ Date 3/98

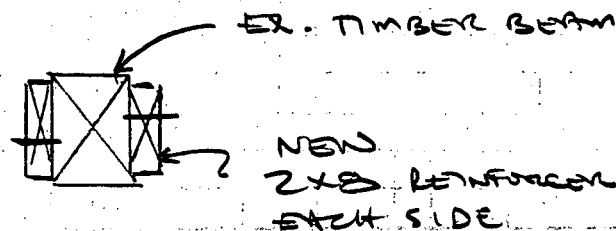


## (2) DETAIL

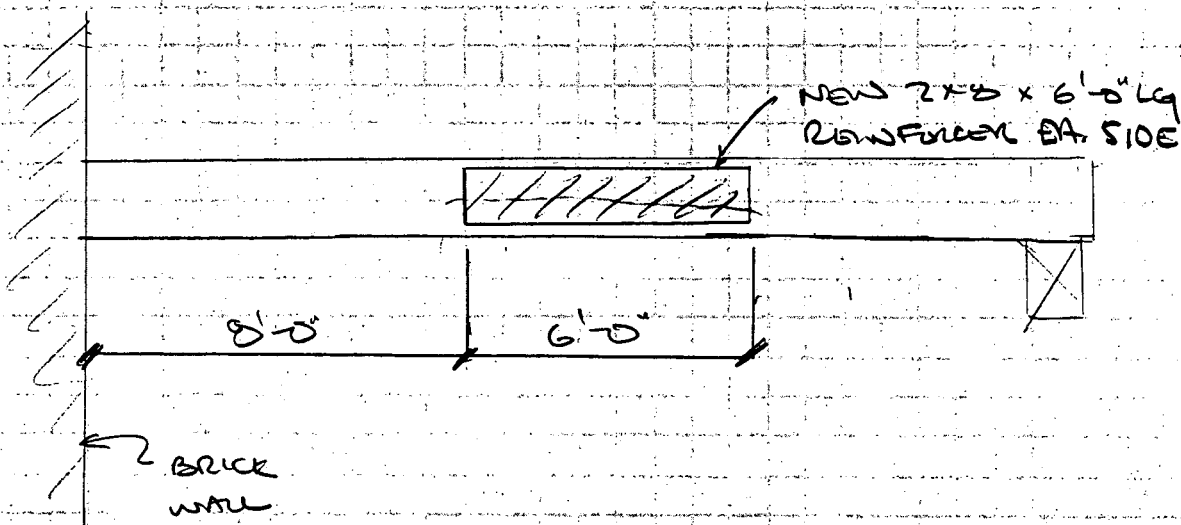


# Calculation Sheet

Computed by NCS Subject BUDG 12 - PASS RM Sheet 1 of 1  
 Checked by \_\_\_\_\_ Client BOSSERT - EPA Job No. \_\_\_\_\_ Date 3/99



## (3) DETAIL



Calculation  
Sheet

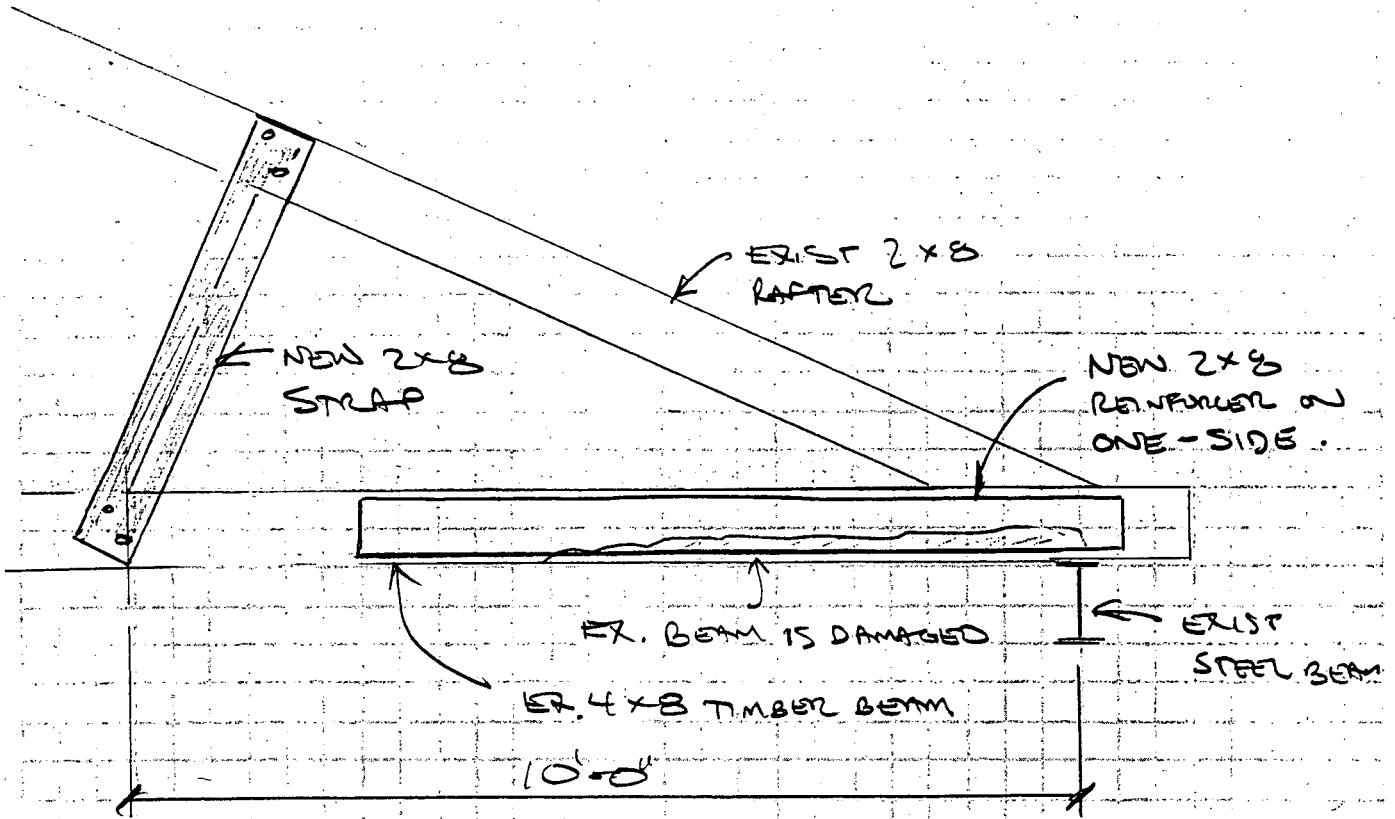
Computed by NSS

Subject BUDG 12-PR255 em Sheet 1 of 1

Checked by \_\_\_\_\_

Client Bassett - EPA

Job No. \_\_\_\_\_ Date 3/98

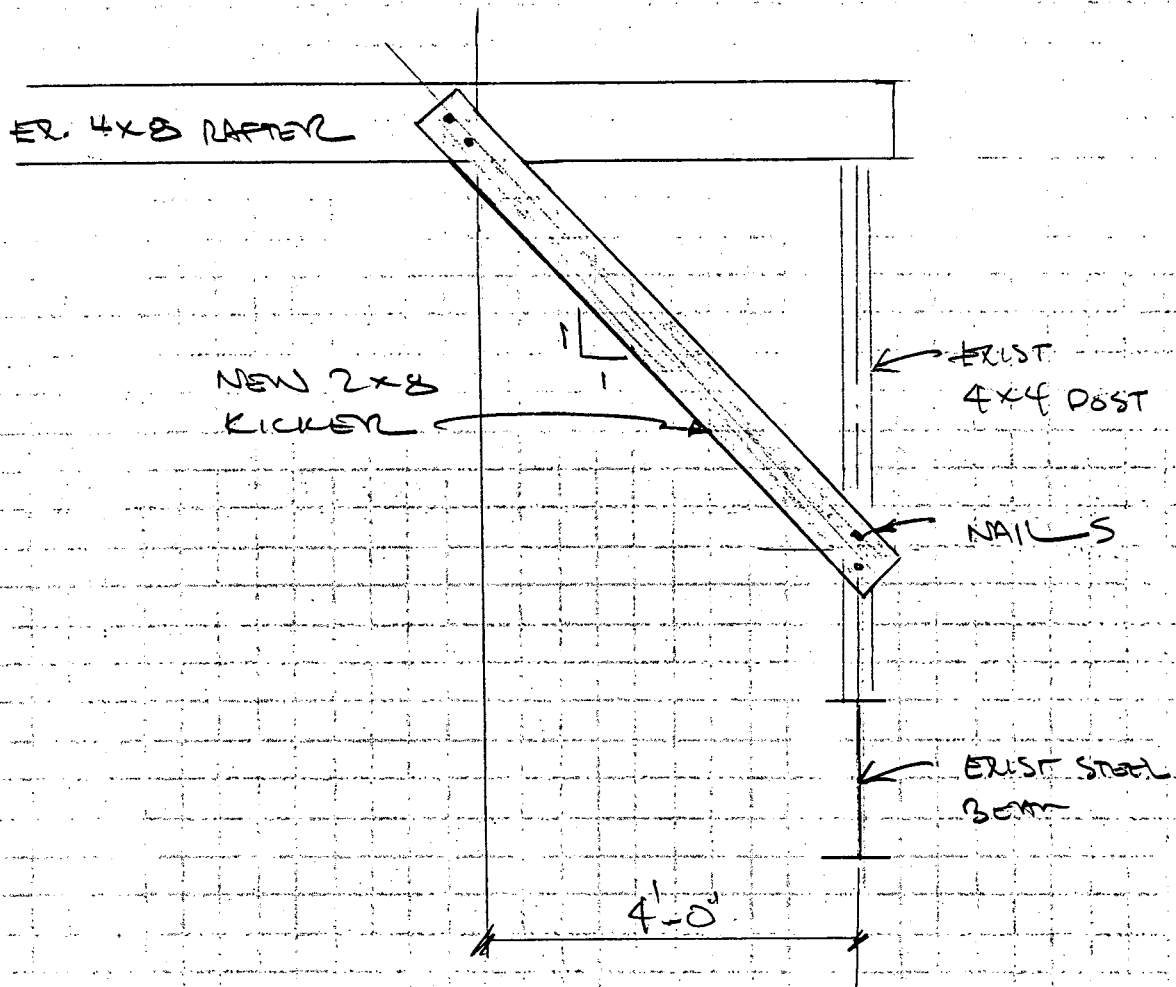


6 DETAIL



# Calculation Sheet

Computed by NSS Subject BLOG 12 - PRESS RM Sheet 1 of 1  
 Checked by \_\_\_\_\_ Client BOSSENT-EDA Job No. \_\_\_\_\_ Date 3/98



11

DETAIL

TYPICAL 2-LOCATIONS

# Calculation Sheet

Computed by MSS

Subject B20612- Press RM

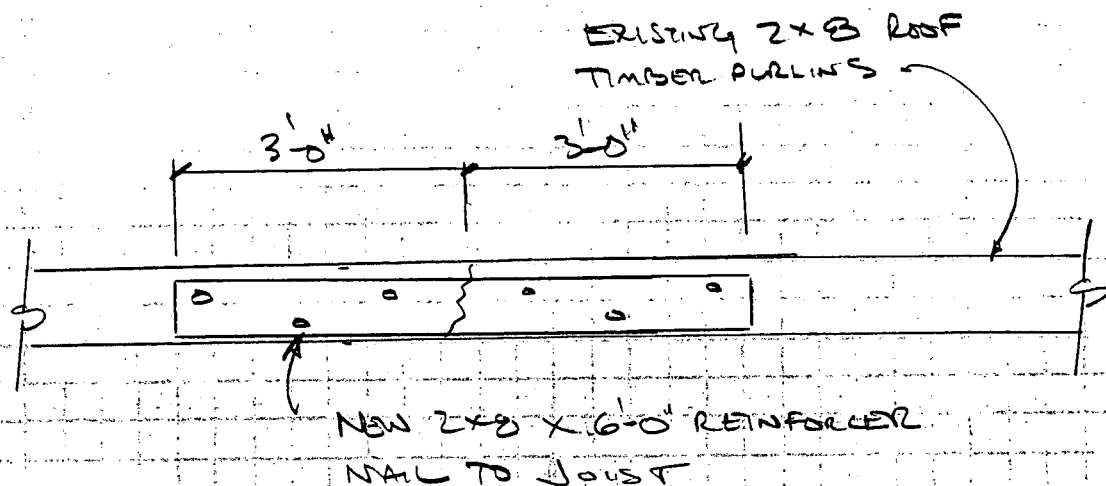
Sheet 1 of 1

Checked by \_\_\_\_\_

Client BOSSENT-EDA

Job No. \_\_\_\_\_

Date 3/90



7

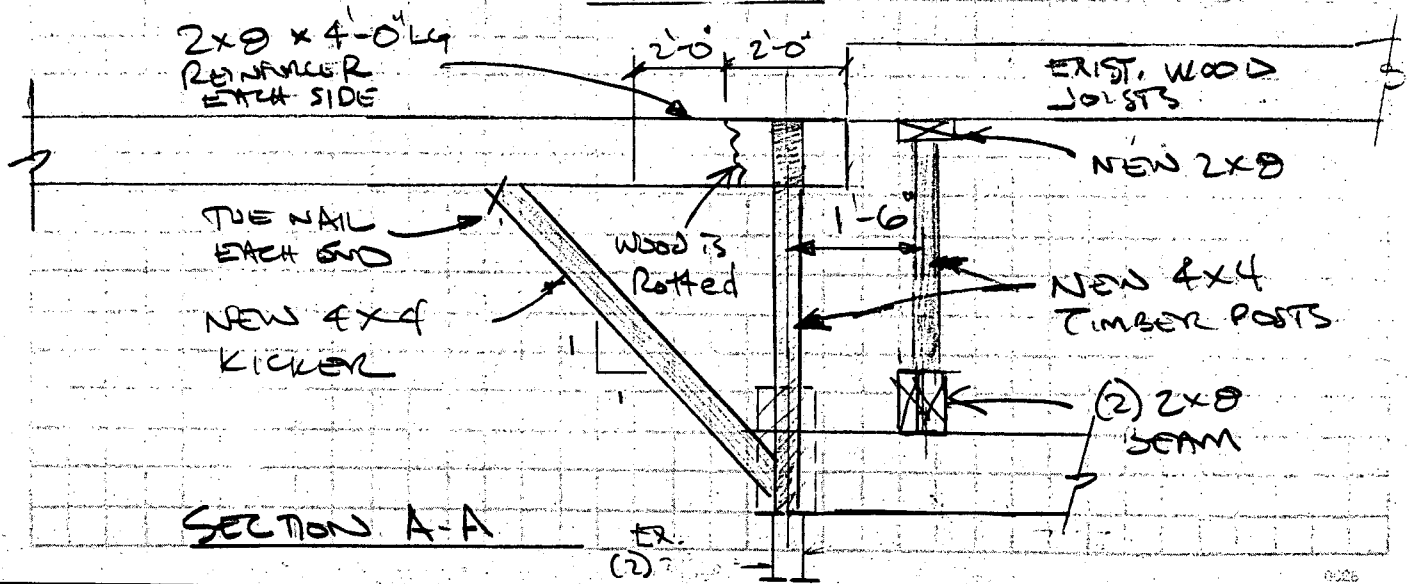
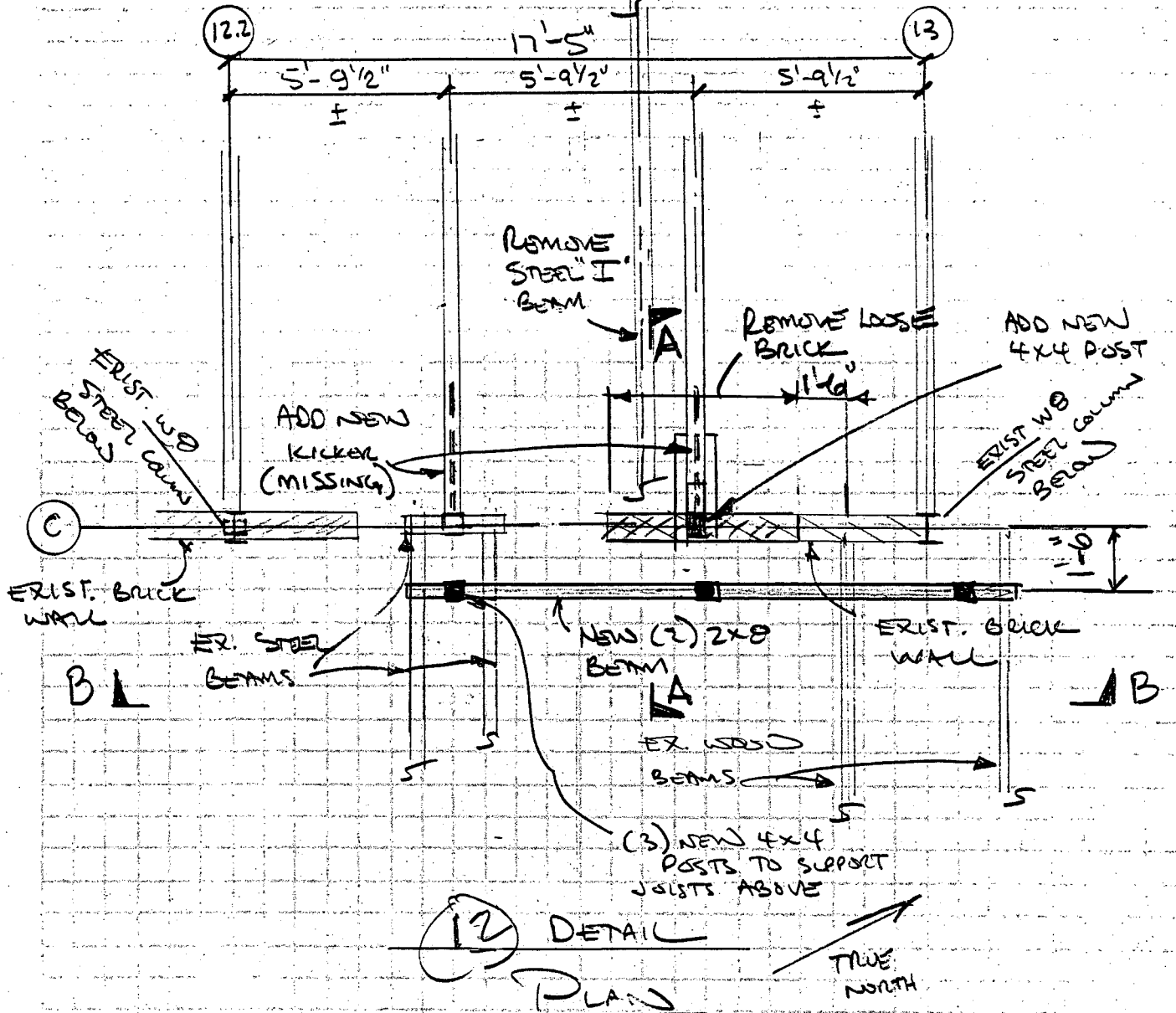
DETAIL  
2 LOCATIONS

13

DETAIL  
5 LOCATIONS

## Calculation Sheet

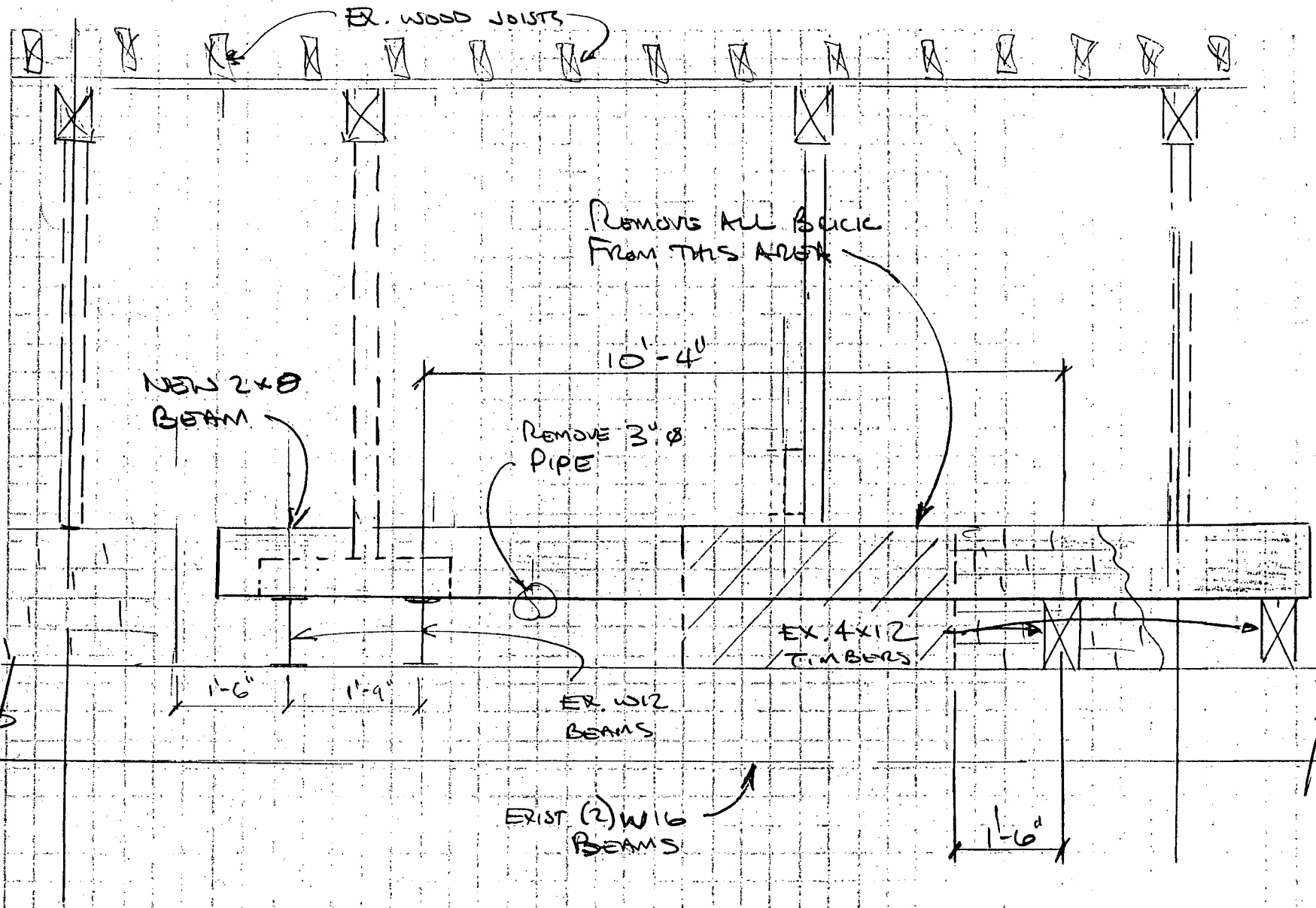
Computed by NSS Subject BLOG 12 - PRESSRM Sheet 1 of 2  
 Checked by \_\_\_\_\_ Client Bussent-EDA Job No. \_\_\_\_\_ Date \_\_\_\_\_



DETAIL 12

# Calculation Sheet

Computed by MSS Subject Bldg 12 - Press Rm Sheet 2 of 2  
 Checked by \_\_\_\_\_ Client Passant, BOA Job No. \_\_\_\_\_ Date 3/98



SECTION B-B  
 DETAIL 12

# Calculation Sheet

Computed by MSS

Subject BLDG 12 - Pressur

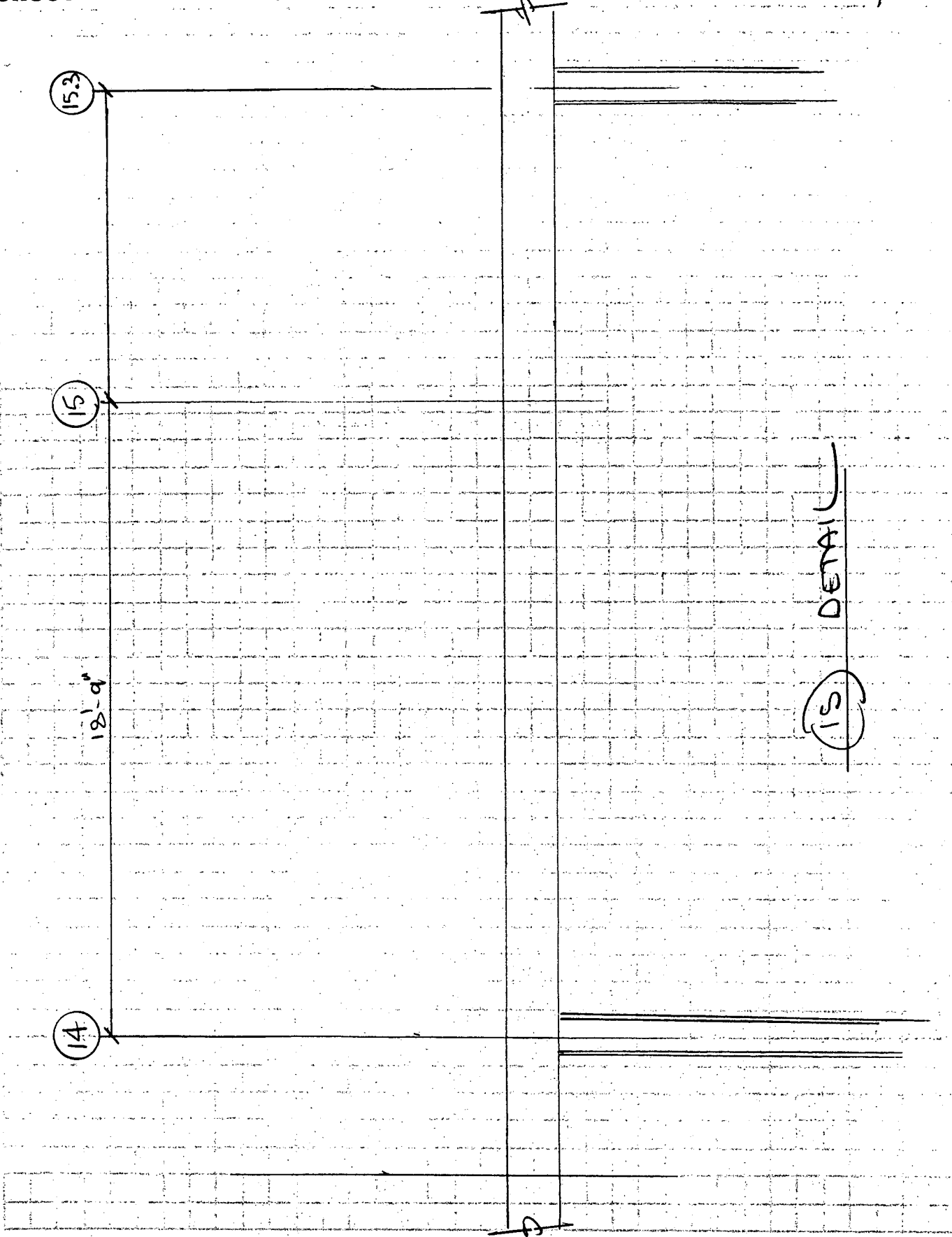
Sheet 1 of 1

Checked by \_\_\_\_\_

Client BASSIST - EPA

Job No. \_\_\_\_\_

Date 3/98

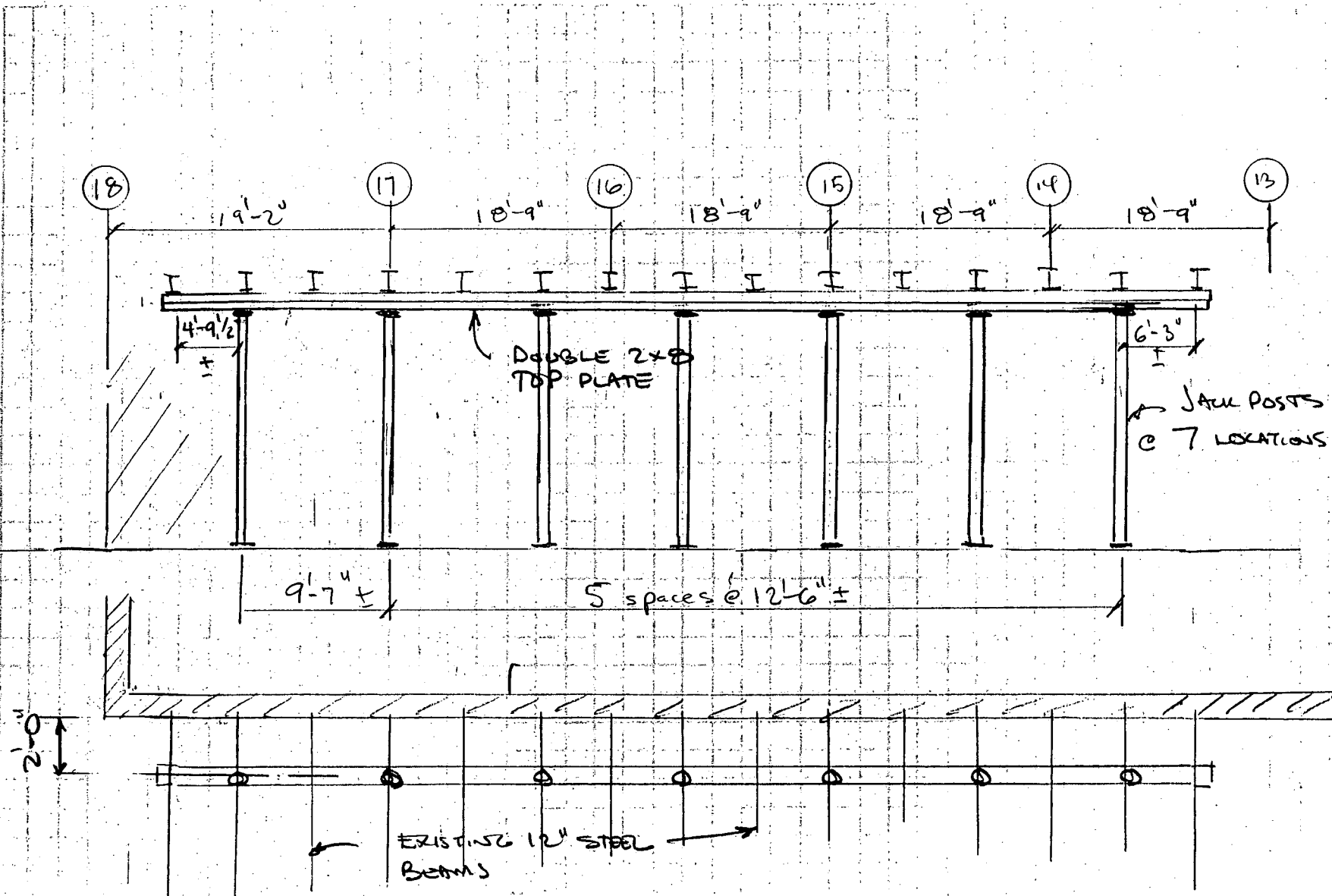


Computed by WSS Subject BUDG 12 OVERS RM Sheet 1 of 1  
Checked by \_\_\_\_\_ Client Bosman - EPA Job No. \_\_\_\_\_ Date 3/98



# Calculation Sheet

Computed by MSS Subject BRIDGE 12 - BRSS RM Sheet 1 of 1  
 Checked by \_\_\_\_\_ Client BOSSANT - ERA Job No. \_\_\_\_\_ Date 3/98



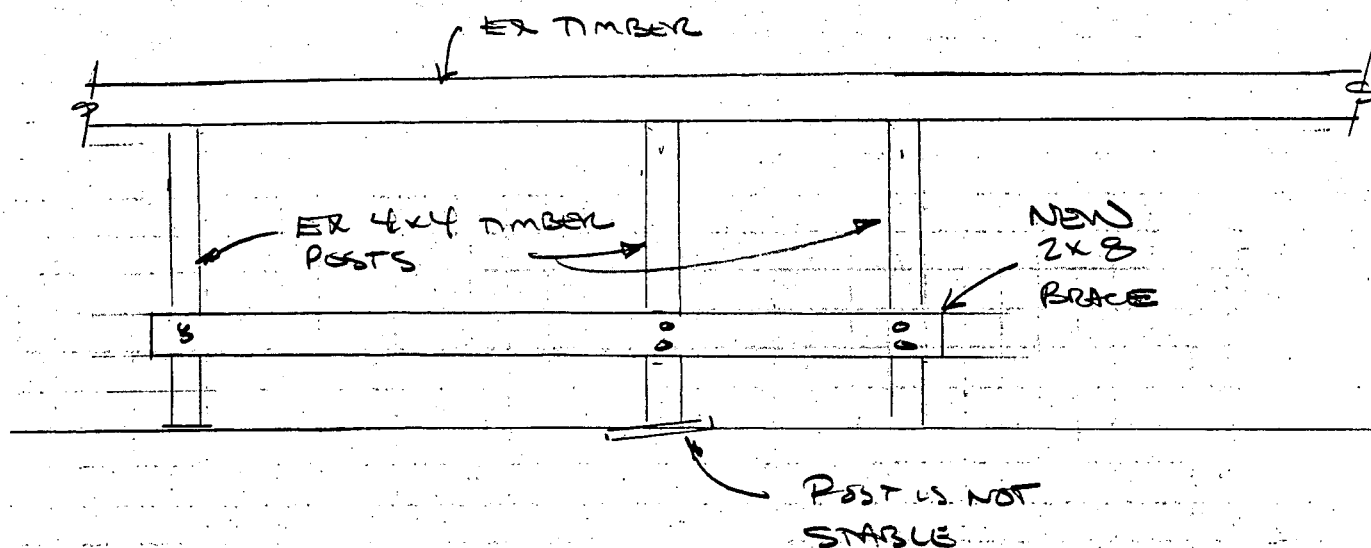
(18) DETAIL

**Calculation  
Sheet**Computed by MSSSubject Box 12 - Press RmSheet 1 of 1

Checked by \_\_\_\_\_

Client Bossert - EPA

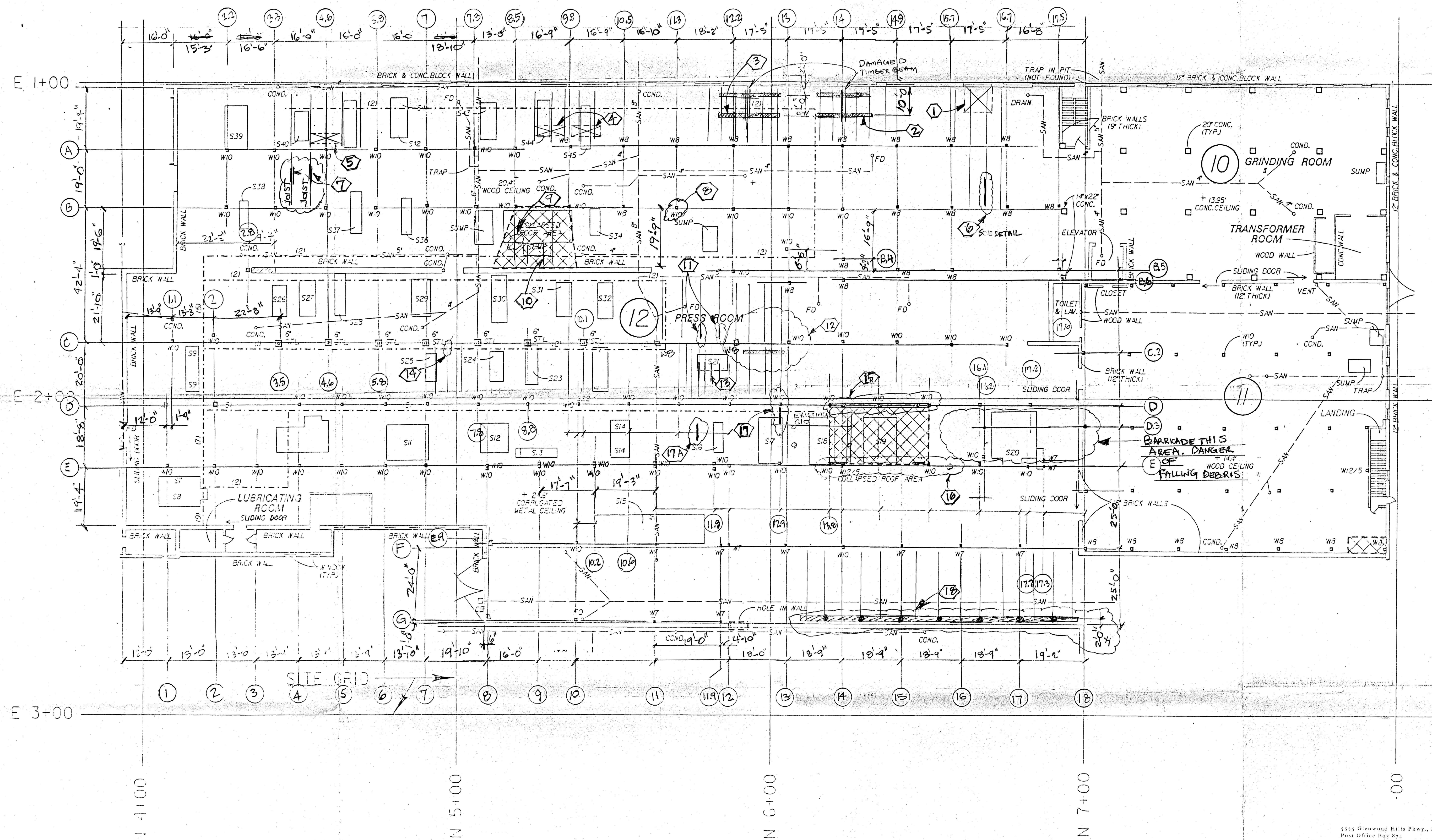
Job No. \_\_\_\_\_

Date 3/99

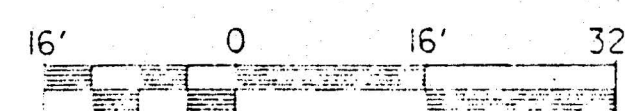
19

DETAIL





AREA 12  
PARTIAL FIRST FLOOR PLAN

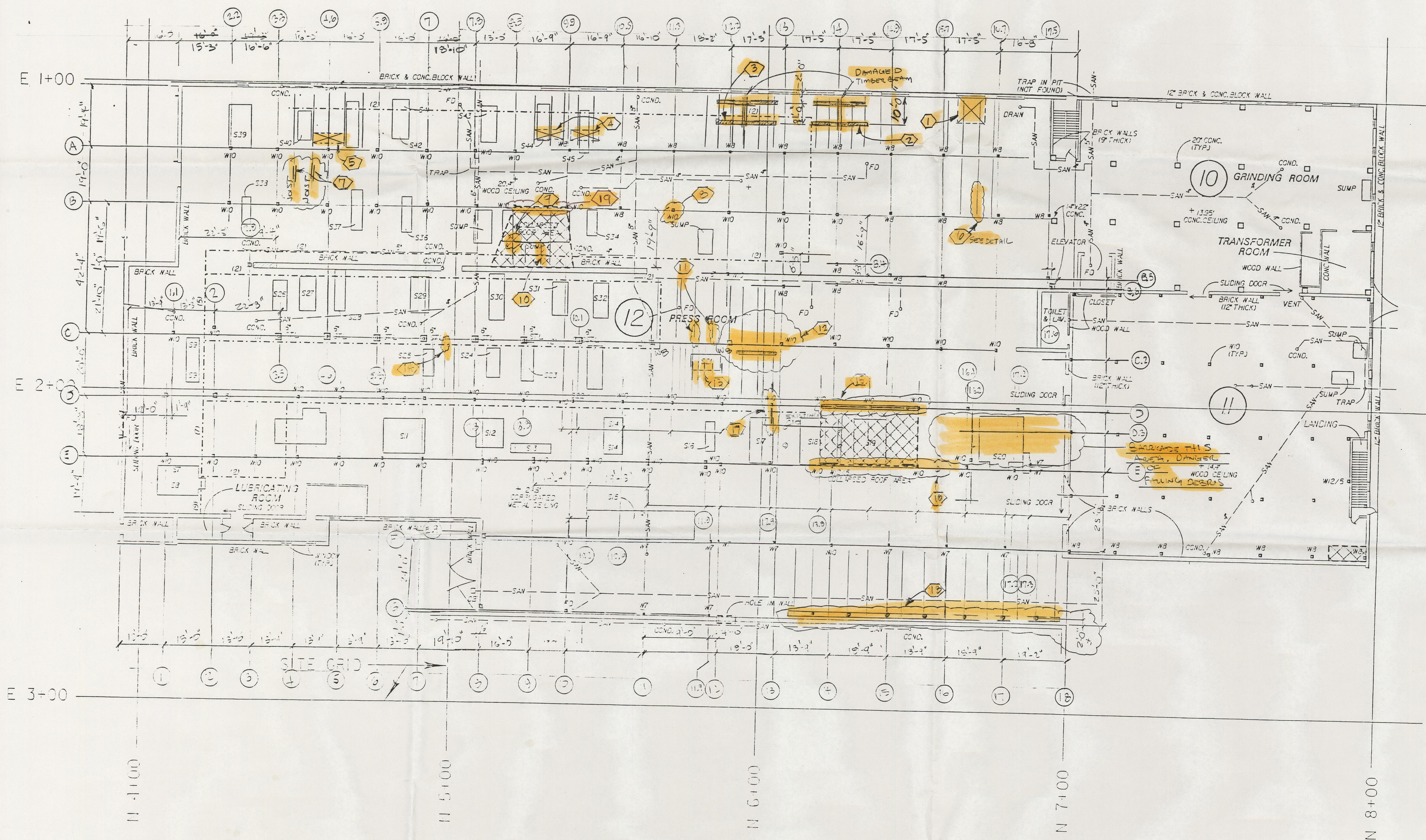


EARTH TECH

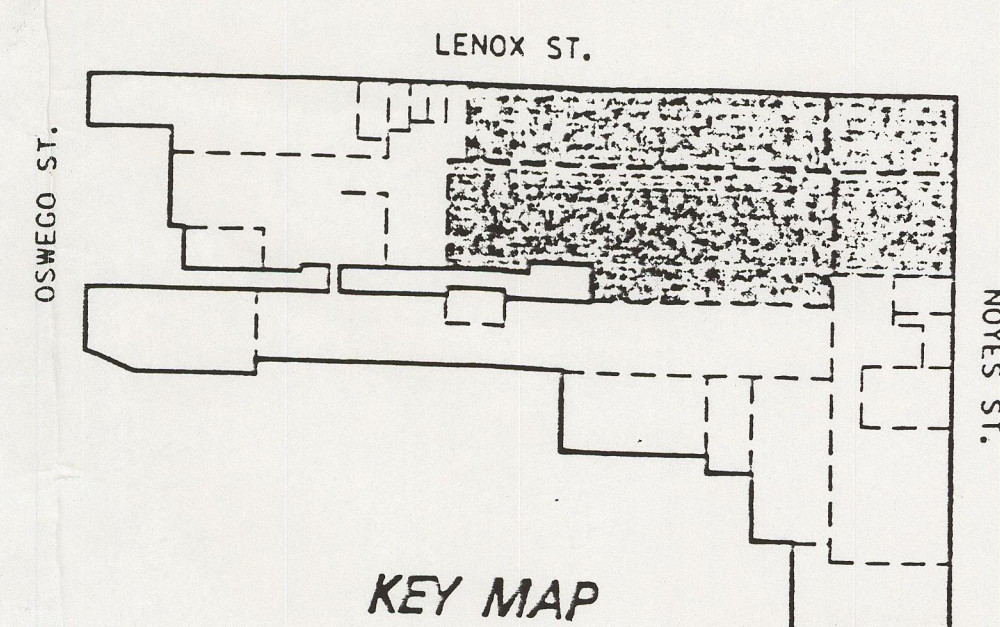
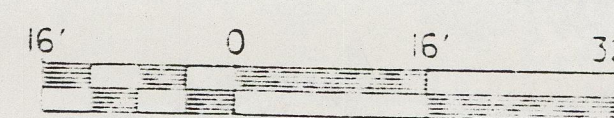
5555 Glenwood Hills Pkwy., SE  
Post Office Box 874  
Grand Rapids, Michigan  
49588-0874

AREA 12 FLOOR PLAN  
STRUCTURAL MODIFICATIONS  
EARTH TECH  
MARCH 10, 1998



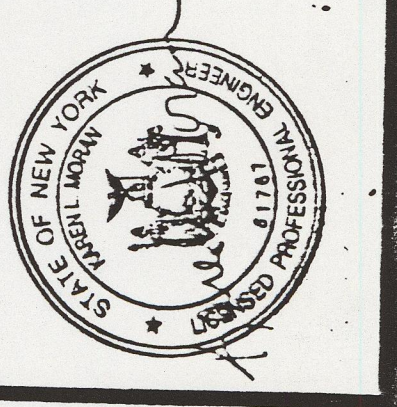
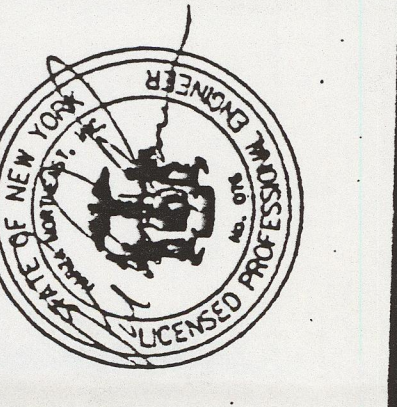


PARTIAL FIRST FLOOR PLAN



IT IS A VIOLATION OF THE LAW FOR ANY PERSON UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ARCHITECT/ENGINEER TO ALTER OR RE-REVISION THIS PLAN. ANY ALTERATIONS MUST HAVE THE SEAL, AFFIXED ALONG WITH A DESCRIPTION OF THE ALTERATION, THE SIGNATURE AND DATE.

**HARZA**  
NORTHEAST  
Architects, Engineers, and Construction Managers  
**O'BRIEN & GERE**  
ENGINEERS, INC.



FORMER BOSSERT MANUFACTURING PLANT  
PHASE I REMEDIATION

1002 OSWEGO STREET  
UTICA, NEW YORK 13503

COUNTY OF ONEIDA

DEC. SITE CODE: 6-33-029

PROJECT NO. 6648

REVISION	DATE	BY
DATE	10-24-97	
DRAWN BY	JC	
CHECKED BY	NDS	
APPROVED	PDR	
SCALE	1/8" = 1'-0"	

SHEET TITLE  
**BUILDING  
REMOVAL  
PLAN -  
SHEET 2**

SHEET NO.

**BR2**